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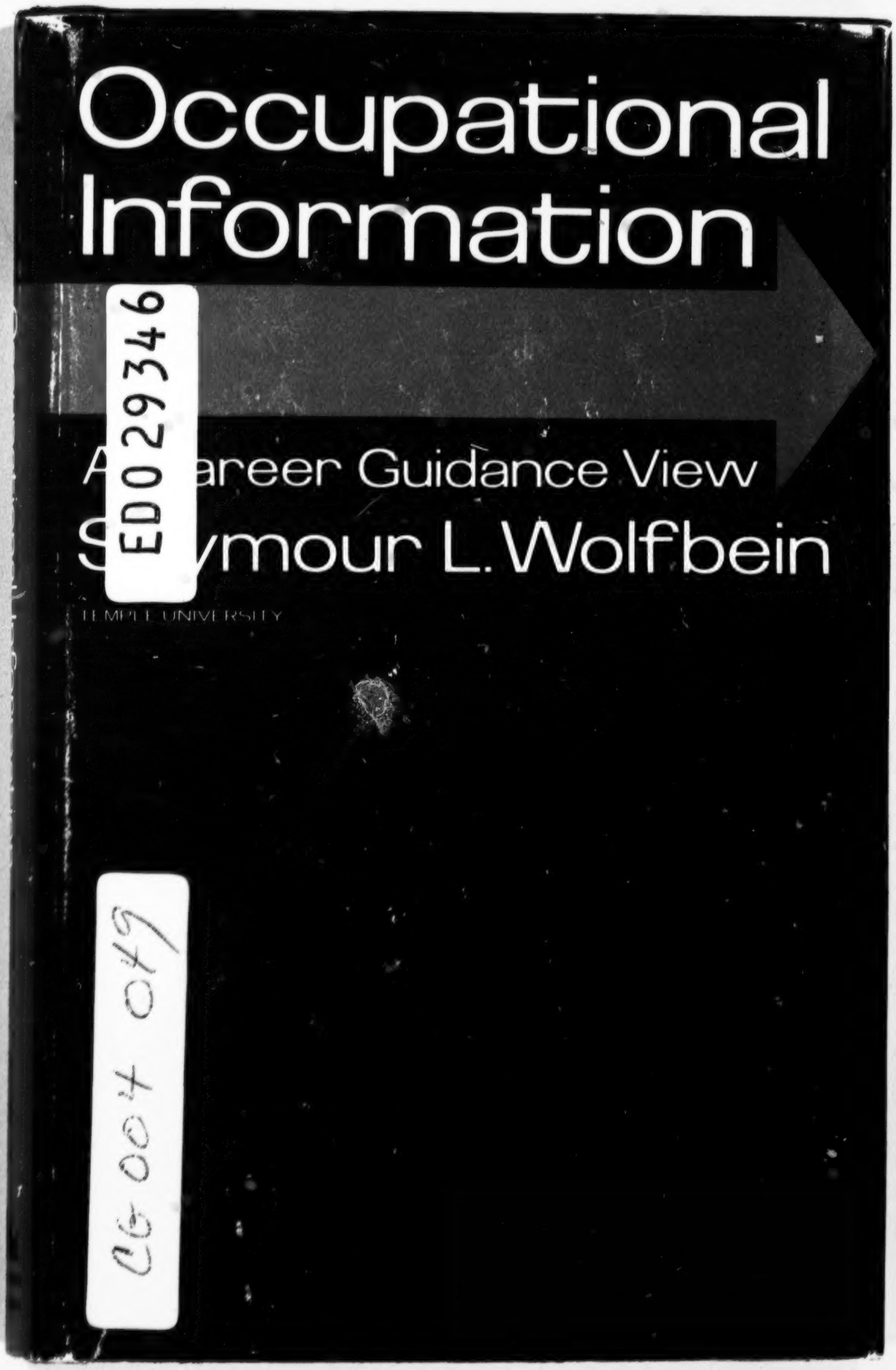
This book deals not with the administrative or information searching processes related to the guidance function of providing occupational information, but with the substantive information itself. It presents a contemporary view of values, trends, and principles, derived primarily from statistical information describing the current world of work. In the first of two major parts, the author discusses "The People and Their World of Work", focusing on population patterns and trends, future manpower needs, the industrial scene, current occupational standings, and the relationships between life and work. The second part, "The Social and Economic Setting", focuses on workers and nonworkers, automation and education, migration and mobility, income and earnings, and unemployment and poverty. Suggested readings and references are given at the end of each chapter. (BP)



# Occupational Information

## A areer Guidance View

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# Occupational Information

The transcendent theme of this book is the inexorable force of change, its vicissitudes, the significant challenges it generates, the great opportunities it creates. Response to change will vary with place, time, and the individual. But the basic strategy involved seems given: every individual has to get the broadest vantage point in his education, training, and, in fact, work experience, so that he can be as flexible, adaptable, maneuverable, and responsive to these changes as possible.

Everyone involved in the career process—the family, the educators and trainers, the students and trainees, the government and various community agencies—should be concerned with the factors discussed in this volume: the strategy of career development; learning, labor, and leisure; the importance of a skill and a craft; the quality of education; and the importance of economic and manpower policy.

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# *Occupational Information*

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## A CAREER GUIDANCE VIEW

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RANDOM HOUSE
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TO
*Fanny and Samuel Wolfbein*

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# *Introduction*

Since World War II America has witnessed three major developments which have made this volume possible and to which, in fact, the book is addressed.

The first is the substantial increase in school enrollments which made the secondary school the prime arena in which the guidance and counseling process was carried out, and which in more recent years has moved both back into the elementary grades and forward into the burgeoning college and university fields.

The second is the corresponding upturn in the number of counseling practitioners at all levels of the educational process and, in turn, *their* education and continued training in which occupational information has achieved a key position.

The third is the cornucopia of relevant materials relating to our work environment which has become available as government, industry, and labor, as well as the educational system, have sought the best kind of economic information for their own policies, programs, planning, and decision-making.

The chapters in this volume have by now run the gauntlet of uncounted college courses in occupational information, varieties of institutes and colloquia, as well as a myriad of parent-teacher groups, and have benefited from the enormously responsive comments made by the faculty, students, and lay people involved.

What has emerged is a book which does *not* deal with the administrative and operational aspects of the guidance process—how to keep up to date, how to order and file needed occupational materials, and so forth. Rather, it focuses on the substantive information itself and attempts to distill from it the basic and universal values, trends, and principles which ought to be part of the core endowment of all teaching and counseling personnel, no matter at what level or at what stage of the process they perform.

Such an endowment appears more and more urgent today, not only because it pertains to a critically important sector of the environment to which we all seek to help people relate; not only because it actually serves as the only viable vantage point from which to keep up to date and discerning of current developments; not only because it contains some primary lessons which are important to all stages of the guidance process, for example, the overriding, omnipresent force of change; but also because in the next ten years it will be of particular importance to the cornucopia of programs conducted under new policies in the economic, manpower, education, training, work-income, and poverty fields in which we will all be involved.

# *Occupational Information*

PART ONE

# The People and Their World of Work

*A quarter of a century of change following the end of World War II has generated a series of events which irrevocably altered the setting in which the nature and conditions of employment in the United States are determined. These events have been so fundamental and so strong in their impact that they have combined to bring about a manpower revolution.*

*Five forces in particular have been in the vanguard of these changes. They involved the enormous upsurge in births which resulted in the biggest ten-year population increase in our history; the consequent unprecedented cast given to our manpower profile with its hourglass shape involving a big bulge at both ends of the age scale and a very narrow waist between; so fast an increase in the service-producing industries that they overtook and left way behind the goods-producing sector as the major employer of workers; a reversal in the occupational standings in which the white collar jobs took the lead, knocking the blue collar job field out of first place in job opportunities for the work force; and a dramatic change in the amount* *and proportion of our lives spent in work, education, and retirement.*

*Every occupational field, every industrial sector, has been significantly affected by these changes, and the economic environment for Americans is inextricably bound up with the course of events these changes are generating. No age group, whether it be the young first embarking on their full-time entry into the work force or people already well along the mainstream of their career development, will be immune to these changes which are reviewed and analyzed in this, Part One of our volume.*

## CHAPTER I

# *Population Patterns and Trends*

In the economist's lexicon, one of the surpassingly important terms is the *Gross National Product*, alphabetized as so many terms tend to be as the GNP.

The Gross National Product is nothing more nor less than a measure of the total production of all the goods and services of a country. It is the dollar value of *everything* produced—steel, coal, autos; haircuts, shoe repair, and dry-cleaning services; food, feed, and fiber; highways, school buildings, and apartment houses; airline flights, railroad rides, and bus trips; gas, electricity, and fuel oil—literally *every* item or service produced over a given span of time.

Looked at this way, the GNP is a key index of a country's well-being. In fact, the tripling of the GNP per capita since the turn of the twentieth century—the threefold increase in the amount of goods and services available for every man, woman, and child—is usually cited as evidence of the enhancement of America's standard of living during this period of time.

There is another side to the GNP coin. By definition, it also represents the total amount of factor costs; that is, the amount paid out to the various factors of production—land, labor, capital, entrepreneurs, government—in the form of rent, wages, interest, profits, and taxes to produce that GNP.

All other things remaining equal, a rise in the GNP will elicit a bigger demand for the services of the factors of production, including the one factor of major interest in this volume—workers and the nature and conditions of their employment.

We have carefully used the words "all other things remaining equal" because there can be many a slip between an ascending GNP and the need for more jobs. The enlarged demand for a given good or service can be met by putting existing staff on overtime. Or the staff can be made more efficient and productive by increasing automation and technological change.

In fact, a rising GNP is needed not only to keep the current working population on their jobs but also to absorb those affected by advancing technology, those already unemployed and seeking a job, and all the newcomers to the labor force.

It therefore turns out to be a matter of critical importance to do everything possible to maintain high levels of GNP or economic growth, which means maintaining high levels of demand for the goods and services produced in the country. This was the basic reason why, for example, so much emphasis was put on the income tax cut of 1964, because of the expectation that most of the additional after-tax income would be spent, thus stimulating the market for goods and services and, in turn, eliciting a greater demand for people in jobs to help produce those goods and services.

The nature of the various forces which play a role in our economic growth and the manner in which they interact to define the job picture at any given time are diverse and complex. But there is one force that is fundamental and can be used as a point of departure down the road to an understanding of current and anticipated job trends: the size and composition of the population of the United States.

Using again the qualification "all other things remaining equal," it is possible to affirm that there is an extremely important relationship between this country's economic growth (and jobs) and the very size and rate of growth of its population. The larger the population, the greater the potential demand for goods and services. But numbers alone are not the controlling element in the impact of population; its composition also can make an enormous difference.

Thus, a significant increase in the teenage population can have an effect on the demand for food, dress, and education quite different from a comparable rise in the older population which consumes less food and education, but is an avid user of medical services of all kinds. And this, in turn, is quite different from a comparable rise in the population of those in their early twenties (which actually is where the big surge is going to be in the immediate years ahead) where the beginnings of family formation generate a big demand for such items as housing for the newly married.

## *Current Population Patterns*

The vital statistics of this country are one of the really insightful sets of information distinctly relevant to job trends. Numbers alone, while by no means the only part of the story, are impressive and important. For example, almost 65 million children were born in the period 1950–1965. Sixty-five millions is a very large figure by just about any standard, but its importance is perhaps even more clearly discerned when it is understood that this means that almost one out of every three persons alive in the United States today was not even here a short decade and a half ago.

A brand new group of people of such enormous size and proportion, compressed into such a relatively short span of time, is bound to have an overriding impact on the job market. Together with their counterparts who were born immediately after World War II, they have inundated in turn the elementary and secondary schools and now the colleges and universities; they represent the biggest new dimension of the job world of the immediate years ahead.

This very sizable part of our population also moves from a far different vantage point than its immediate predecessors. These people have new aspirations, new goals, new expectations. No student, no participant, no practitioner in the arena of education, guidance, or employment can afford to overlook them.

The story of the recent trends in births in this country is recorded in Table 1. Running at about 2½ to 2¾ million per year during the early 1940s, births rose to the 3½ million mark in the late 1940s, increased to and stayed above the 4 million level for more than ten years in a row, and only since 1964 have dropped back to their 1950 numbers.

What the very recent declines in the birth *rates* portend is still not clear, if only because they are about to apply to a new large *number* of young women of childbearing age, made up of the generation of significantly large size formed by the post–World War II upturn in births. In any case, some of these later developments may be of special significance to the job world around the middle of the 1980s. For the next fifteen years, the arithmetic of population growth already has been irrevocably written in terms of its impact on the labor force.

TABLE 1 *Live Births in Thousands and Birthrates per Thousand of Population 1940–1966*

| *Year* | *Births* | *Birthrate* | *Year* | *Births* | *Birthrate* |
|---|---|---|---|---|---|
| 1940 | 2,559 | 19.4 | 1953 | 3,902 | 24.6 |
| 1941 | 2,703 | 20.3 | 1954 | 4,017 | 24.9 |
| 1942 | 2,989 | 22.2 | 1955 | 4,047 | 24.6 |
| 1943 | 3,104 | 22.7 | 1956 | 4,163 | 24.9 |
| 1944 | 2,939 | 21.2 | 1957 | 4,285 | 25.0 |
| 1945 | 2,735 | 19.5 | 1958 | 4,204 | 24.3 |
| 1946 | 3,289 | 23.3 | 1959 | 4,245 | 24.0 |
| 1947 | 3,700 | 25.8 | 1960 | 4,258 | 23.7 |
| 1948 | 3,535 | 24.2 | 1961 | 4,268 | 23.3 |
| 1949 | 3,560 | 23.9 | 1962 | 4,167 | 22.4 |
| 1950 | 3,554 | 23.6 | 1963 | 4,098 | 21.7 |
| 1951 | 3,751 | 24.5 | 1964 | 4,027 | 21.0 |
| 1952 | 3,847 | 24.7 | 1965 | 3,767 | 19.4 |
|  |  |  | 1966 | 3,629 | 18.5 |

*Source:* U.S. Department of Health, Education, and Welfare, Public Health Service, Division of Vital Statistics.

To put the current situation in perspective, it may be noted that it takes about 2,130 children per 1,000 women to replace a generation of parents. (We need a little over two children per couple because of some infant and child mortality.) At recent rates, the current generation of parents presents a potential population growth of 50 percent per generation, which may be mitigated in part if the very recent downturns in births continue.

Childlessness, as a matter of fact, has apparently gone out of fashion. By the mid-1960s, for example, only 7 percent of the wives 30 to 34 years of age had borne no children. The corresponding figures on childlessness among the married women in that age group were as high as 23 percent in 1940 (after ten years of depressed economic conditions), 17 percent in 1950, and 10 percent in 1960.

All of this means that the 28 million increase in the population of the United States just between 1950 and 1960 was the largest ten-year upturn in its history. The increase alone was equal to the size of the entire population of the country just a few years before the Civil War; it was 1½ times the entire 1960 population of Canada. In percentage terms, the 1950–1960 population increase also was the greatest so far this century. The population of the United States has now crossed the 200 million mark, double what it was only a little over 50 years ago. It is expected to reach somewhere around 210 million by 1970 and 300 million by the year 2000.

The shape or configuration of the population profile has changed dramatically, too. For example, throughout this country's history, the average age of the population has been going up. Birthrates gradually dropped with the beginning of the nineteenth century, health services improved, and people lived to older ages. As a result, the average (median) age of the population of the United States rose from 16.7 years in 1820 (the first year for which this information is available) to 30.2 years in 1950. But the avalanche of births in recent years caused the first reversal of this trend. By 1960 the average age was down to 29.5 years; by 1965 it was down to 27.9 years—a substantial drop for this kind of figure in such a short period. This kind of population movement also has meant a distinct shift in the ratio between the so-called productive age groups, where most are workers, and the nonproductive age groups, where most are not in the labor force at all, because they are either too young or too old. The relationship between the two, the dependency ratio—that is, the ratio between the number of people under 18 and 65 and over to the number 18–64 years of age—rose very sharply, from a little over 64 percent to about 84 percent between 1950 and 1965.

This is to say that by 1965 there were 85 people who were either under 18 or 65 and over for every 100 people between 18 and 64 years of age—up a full 20 percentage points, or almost one-third, from 1950. Most of this upturn was caused by the increase in the number under 18 years of age who, in 1965, accounted for 36 percent of all the people in the United States.

These developments have put an added emphasis on the employment, unemployment, and earnings position of that part of the population which works and must thus serve as the basis of productive support to a significantly expanded group of people for whom resources have to be made available for their rearing and education on the one hand and for their retirement and life in old age on the other.

In this connection, the critical importance of work for the nonwhite population is underlined by the enormous increase in their dependency ratio during the past decade and a half (Table 2). Their dependency

TABLE 2 *Dependency Ratio* for Whites and Nonwhites 1950–1965*

| *Year* | *Total* | *White* | *Nonwhite* |
|---|---|---|---|
| 1950 | 64.4 | 63.4 | 73.7 |
| 1955 | 73.4 | 70.3 | 84.1 |
| 1960 | 81.7 | 80.1 | 94.9 |
| 1961 | 82.3 | 80.6 | 96.8 |
| 1962 | 83.1 | 81.3 | 98.5 |
| 1963 | 83.8 | 81.8 | 99.8 |
| 1964 | 84.4 | 82.6 | 101.2 |
| 1965 | 83.6 | 81.4 | 101.8 |

* Proportion of persons under 18 and 65 years of age and over per 100 persons between 18 and 64 years.

*Source:* U.S. Bureau of the Census.

ratio always has been higher than that of the whites; but never has the spread been as wide as it is now. In fact, the dependency ratio for nonwhites is already over 100 percent; that is, there are actually *more* nonwhites under 18 and 65 and over than there are in the entire sector 18 to 64 years of age.

The dependency ratio will be going down as the mass of young people move into their productive years, but for the foreseeable future it will remain significantly higher than the levels which prevailed before the 1960s.

The increase in the *proportion* of younger people in the population and the drop in the average age of the population are all the more remarkable when compared to the fact that the numbers and proportions of older people also have been going up. The number of persons 65 years of age and over rose by 4⅜ millions between 1950 and 1960, at double the national rate for the population as a whole. They now account for close to 10 percent of the United States population, almost 2½ times the comparable proportion at the turn of the century.

The age profile is not the only facet of the population picture which recent events have redrawn. Even the sex ratio has been altered and is still changing. At birth, there are almost 105 boy babies for every 100 girl babies. From then on it isn't even a race, because girls have a significantly lower mortality rate. By the time they are 15 to 24 years of age, the sex ratio (number of boys per 100 girls) is just about even at 100; by age 45–64 it stands at about 94; and at 65 years of age and over it is way down to about 78. By the mid-1960s, the total number of women outnumbered men by more than 3½ millions, as their life expectancy at birth exceeded that of men by a full seven years.

The 1950 census returns showed that for the first time in this country's history there were more females than males, and the 1960 figure showed the gap was widening. In 1965, the overall sex ratio was 97.1.

At the same time, the life cycle of the American family has changed. Today, the average girl marries when she is a little over 20 years of age; her husband averages just short of 23 years of age. Around 1900, the average age at first marriage of a girl was two years higher, for men more than three years higher.

Equally important is the fact that improved life expectancy has increased the span of years spent together by these married couples. The average woman who first married 60 years ago could expect 35 years of married life with her husband; today, the figure is 45 years. In fact, on the average, a married couple can expect to spend a little over a decade and a half together after the youngest child has left home. At the beginning of the century, one of the parents was already dead when that child left home.

Finally, recent population trends apparently point to a significant restructuring of both numbers and proportions by race. The nonwhite population has been growing much more rapidly than the white population, primarily because of a substantially higher birthrate among the nonwhites. For example, in 1960, the birthrate for nonwhites was 32.1 per thousand, in contrast to the 22.7 per thousand figure for whites. As a result, just in the first half of the current decade the young nonwhite population (under 14 years of age) increased by 12 percent—triple the corresponding increase among their white counterparts. In 1965, about 37 percent of the entire Negro population were under 14 years of age, compared to 28 percent for whites.

The results can be seen in the impact on the numbers of people 18 years of age, important because age 18 is about the average at which the American male makes his first full-time entry into the labor force. Beginning in 1965, this number suddenly jumped because of the corresponding upturn in births in 1947. The number of white boys becoming 18 in 1965 and in 1970 will remain high, but at about the same level. Among nonwhites, the number reaching age 18 will continue to rise and in 1970 will be 18 percent greater than the corresponding figure for 1965.

These differential patterns in births are, of course, importantly related to social and economic conditions. For example, there is a perfect inverse relationship between the level of education of women and their fertility. The number of children per thousand among wives who are close to the end of their childbearing age (40–44 years) is 70 percent higher for those with no more than a grade-school education than for those with a baccalaureate or more.

There is also a perfect inverse relationship between family income and fertility. For example, the number of children born to women 15–44 years of age runs about 60 percent higher in families making less than $2,000 a year than in families with income of $10,000 and over.

Knowing this makes it less surprising to find that births among nonwhite women with a college degree or better are anywhere from a half to only a third of what they are for those with an elementary-school education. And what is perhaps even less known is the fact that births among nonwhite women with some college education are significantly *lower* than those among white women with the same educational background; that for high-school graduates there really is no difference in births between the races; that the big differential is concentrated among nonwhite women who have less than a secondary-school education, particularly those who never went beyond grade school. All these facts are particularly pertinent to some of our subsequent discussions; for example, on income and earnings and educational trends.

## *For the Future*

As indicated, 1965 was an important year because the number of persons reaching age 18 was topping 3¾ million, about 1½ million more than in 1950. In other words, the population changes were beginning to spill over into the manpower arena.

The year 1967 was also an eventful one, not only because it began with a 200 million population total but also because it brought a spurt in the number of persons reaching their twentieth birthday—harking back again to the key year of 1947 and its high birth rates. We now embark upon a decade in which the major growth will be among people in their twenties. This is exactly the age group in which early career development is critical and in which the newly married have their greatest impact on family formation and the expenditures on goods and services that come with the development of new households.

The fact is that each of the various population changes described so far is having and will have an important impact on our manpower future—the subject of the following discussion.

Some of these population developments are recorded in Table 3, which looks ahead to 1975 for all those 14 years of age and over, the group for which labor force information was regularly obtained in this country. Of particular note:

> For all groups, men and women, white and nonwhite, there is an unmistakable pattern of age differentials in population change. In the earlier years of career development, between 20 and 34 years of age, enormous increases are scheduled in the numbers of people between 1965 and 1975.

## TABLE 3 *Population of the United States*

### Actual 1965 / Estimated 1975 by Age, Color, Sex (In millions)

| AGE | WHITE | | | | | | NONWHITE | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Male | | | Female | | | Male | | | Female | | |
| | *1965* | *1975* | *% Change 1965–75* | *1965* | *1975* | *% Change 1965–75* | *1965* | *1975* | *% Change 1965–75* | *1965* | *1975* | *% Change 1965–75* |
| 14 years and over | 60.1 | 69.6 | 16% | 63.3 | 74.0 | 17% | 7.0 | 8.8 | 25% | 7.7 | 9.7 | 26% |
| 14–19 | 9.1 | 10.8 | 18 | 8.8 | 10.4 | 18 | 1.3 | 1.8 | 33 | 1.3 | 1.8 | 36 |
| 20–24 | 6.1 | 8.4 | 38 | 6.0 | 8.1 | 36 | .8 | 1.2 | 53 | .8 | 1.3 | 58 |
| 25–34 | 9.8 | 13.7 | 39 | 9.8 | 13.7 | 39 | 1.3 | 1.9 | 46 | 1.4 | 1.9 | 35 |
| 35–44 | 10.7 | 9.8 | –8 | 11.0 | 10.0 | –9 | 1.2 | 1.2 | — | 1.4 | 1.3 | –2 |
| 45–54 | 9.7 | 10.3 | 6 | 10.2 | 10.9 | 7 | 1.0 | 1.1 | 9 | 1.2 | 1.4 | 17 |
| 55–64 | 7.4 | 8.4 | 14 | 8.0 | 9.6 | 19 | .8 | .9 | 12 | .8 | 1.0 | 23 |
| 65 and over | 7.3 | 8.2 | 12 | 9.5 | 11.3 | 19 | .6 | .7 | 17 | .8 | 1.0 | 24 |

*Source:* Based on U.S. Department of Labor, Bureau of Labor Statistics, Special Labor Force Report, "Labor Force Projections, by Color, 1970–1980," *Monthly Labor Review*, September 1966. Percent changes 1965–1975 are based on the detailed, unrounded data.

However, a prime age group from the labor force point of view is scheduled to *decline* in numbers; that is, the sector of the population between 35 and 44 years of age. People of that age in 1975 will be made up of those who were born during the 1930s, a decade of depression in the economy and in births. Thus, we are scheduled to reap the events of that faraway decade as well as the more recent happenings in the fields of population and workers.

Across the board, the persevering sex differential in life expectancy shows up in larger increases for the women than the men.

Because of the differential birthrates by color, the population increases scheduled for the nonwhites in most age groups are significantly higher than for the whites. For example, the increase among nonwhite teenagers will be double that of their white counterparts between 1965 and 1975. The increases among both nonwhite men and women in their early twenties, scheduled to move beyond the 50 percent mark, are indicative of the job ahead in providing employment opportunities for disadvantaged sectors of the population.

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# CHAPTER II

# *Our Manpower Future*

Predictions of things to come are always subject to the almost certain interjection of the unexpected, and the job field is no exception to this rule. However, in the manpower area generally, the maxim that "what is past is prologue" does hold with great force. This is because what has happened to the population in prior years is the critical determinant of the major dimensions of the labor supply.

This is why the materials in Chapter I are very much to the point. The fact that in 1947 births moved up by a full million over what they were in 1945 made it possible at that time to predict that in 1965 (1947 plus 18) the number of 18-year-olds available for work, for college, for the draft, and for many other activities would lift off to a historic high, as indeed it did.

## *Future Manpower Trends*

A detailed examination of these past population events, combined with an assessment of the influences affecting labor force participation on the part of the various age, color, and sex groups in the population, can serve as an excellent point of vantage from which to prepare a model of the manpower future. This is exactly what is done periodically by a number of private and government agencies. The one most relevant to this discussion is that prepared by the United States Department of Labor, which gives a view of what the decade of 1965 to 1975 will bring by way of manpower change.

The changes during these ten years will affect just about everyone now in high school and college who is scheduled to join the labor force of the United States.

Eight points about manpower developments during the period 1965 to 1975 warrant the spotlight. Table 4 gives some of the details.

1. The period 1965 to 1975 will see the biggest labor force increase for any ten-year period in this country's history. The net increase in the number of workers is expected to reach more than 15 millions, a rise of about 20 percent, compared to the less than 15 percent increase in population during the same period of time. How contrastingly different this experience is from recent prior years can be seen from the fact that the labor force increase scheduled for the decade of 1965–1975 is estimated to end up 50 percent higher than the corresponding upturn of the 1950s.

In terms of numbers, therefore, the labor force is outperforming even the population explosion.

2. A net change in the work force of a country always represents the end result of a great deal of shifting in and out of the job market. During any interval of time, there is a considerable number of entries into the labor force, mainly on the part of brand new young workers, but also by such persons as married women coming back to work after an extended period at home. At the very same time, there are many exits from the labor force on account of deaths, retirement by older people, withdrawals by women getting married and having children, and so on.

## TABLE 4 *The Labor Force of the United States*

Actual 1965 / Estimated 1975 by Age, Color, Sex (In millions)

| AGE | WHITE | | | | | | NONWHITE | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Male** | | | **Female** | | | **Male** | | | **Female** | | |
| | *1965* | *1975* | *% Change 1965–75* | *1965* | *1975* | *% Change 1965–75* | *1965* | *1975* | *% Change 1965–75* | *1965* | *1975* | *% Change 1965–75* |
| 14 years and over | 46.5 | 53.7 | 15% | 23.1 | 29.0 | 25% | 5.2 | 6.5 | 26% | 3.5 | 4.4 | 25% |
| 14–19 | 4.1 | 4.8 | 19 | 2.6 | 3.2 | 23 | .5 | .8 | 46 | .3 | .5 | 70 |
| 20–24 | 5.2 | 7.3 | 39 | 2.9 | 4.2 | 43 | .7 | 1.0 | 50 | .4 | .7 | 52 |
| 25–34 | 9.5 | 13.3 | 40 | 3.6 | 5.2 | 44 | 1.2 | 1.7 | 48 | .8 | 1.0 | 45 |
| 35–44 | 10.4 | 9.5 | –8 | 4.9 | 4.8 | — | 1.1 | 1.1 | 1 | .8 | .8 | –5 |
| 45–54 | 9.2 | 9.8 | 6 | 5.0 | 6.2 | 23 | .9 | 1.0 | 12 | .7 | .8 | 24 |
| 55–64 | 6.2 | 7.1 | 15 | 3.2 | 4.3 | 36 | .6 | .7 | 18 | .4 | .5 | 26 |
| 65 years and over | 1.9 | 1.9 | –2 | .9 | 1.1 | 35 | .2 | .2 | — | .1 | .1 | 7 |

*Source:* Based on U.S. Department of Labor, Bureau of Labor Statistics, Special Labor Force Report, "Labor Force Projections, by Color, 1970–1980," *Monthly Labor Review*, September 1966. Percent changes calculated from detailed, unrounded data.

Behind every net change, therefore, is an enormous amount of shifting around which balances out about as follows for the years 1965–1975:

| | (IN MILLIONS) |
|---|---|
| Number of workers in 1965 . . | 78.3 |
| *Less* | |
| Exits from the work force because of death, retirement, marriage, childbearing . . | 11.7 |
| 1965 workers still in labor force in 1975 . . . . . . . | 66.6 |
| *Plus* | |
| New young workers entering between 1965 and 1975 . . | 23.0 |
| Women returning to labor force during 1965–1975 . . | 4.0 |
| Number of workers in 1975 . . | 93.6 |

Thus, entries of about 27 million and exits of a little short of 12 million net out to the more than 15 million change referred to at the beginning of this section.

This kind of accounting, by showing what lies behind the overall net changes, really begins to zero in on some of the major labor force problems of the period. For example, one of the most significant figures cited in this chapter is found in the balance sheet above: the huge total of 23 million new young workers coming into the work force during the decade.

3. The age profile of the upcoming labor force increase is, in fact, a large part of the story of the manpower future. This profile is very much like an hourglass, with a great bulge at both ends, representing the younger and older extremes of the age spectrum, and a very narrow waist between.

New young workers (14–24 years of age) will account for more than one-third (37 percent) of the entire increase in the size of the working population during the decade 1965–1975 (Table 5). In contrast, during the 1950s, they accounted for only 5 percent of the total labor force increase. Their numbers in the work force are scheduled to rise from just short of 17 million to 22¾ million between 1965 and 1975 (Table 4), an increase of about 34 percent. As a result, persons in this age group will account for almost one out of every four United States workers in 1975, compared to a little over one in five in 1965 (Table 5).

4. The standout labor force increase for this period, however, is being reserved for those in the age bracket of 25–34 years. These are the people who, in 1975, will be made up of those born between 1941 and 1950, a time of rapidly rising births.

For this sector, there will actually be a 41 percent increase in the number of people in the work force. Moving up from about 15 million workers in 1965 to a little over 21 million in 1975 (Table 4), workers aged 25–34 years will account for more than 22 out of every 100 workers in the United States by that time (Table 5).

5. At the other end of the age scale are the older workers, usually defined to include persons 45 years of age and over. They are scheduled to move up from about 29 to 33¾ million between 1965 and 1975, a rise of about 15 percent. By 1975, 36 percent of all workers will be 45 years of age and older. At the end of this age group, however, there will be an exception to this growth. Among men 65 years of age and over, there will be a slight downturn in the number in the labor force between 1965 and 1975, even though the population of the group is going up. The reason: A

continuation of the long-term decline in the rate of labor force participation among elderly men.

6. An opposite course of events is in store for persons in the range of years from 35 to 44. In fact, there will actually be *fewer* of these workers in 1975 than in 1965, just as there will be fewer people as a whole in this age range for reasons already cited in Chapter I. By 1975, there will be one million fewer workers in this prime working age group than there were in 1965.

The age changes among workers from 1965 to 1975 described so far are summarized in Table 5. It shows, for example, that there will be an increase of 6,101,000, or 40.8 percent in the age group 25 to 34 in the labor force; they will account for 39.9 percent of the

TABLE 5 *Age Changes in the United States Labor Force 1965–1975*

| | CHANGE 1965–1975 | | | PERCENT DISTRIBUTION OF LABOR FORCE | |
|---|---|---|---|---|---|
| *Age* | *In thousands* | *Percent* | *Percent Distribution of 1965–1975 Change* | *In 1965* | *In 1975* |
| 14 years of age and over | 15,292 | 19.5% | 100.0% | 100.0% | 100.0% |
| 14–24 | 5,692 | 33.8 | 37.2 | 21.5 | 24.1 |
| 25–34 | 6,101 | 40.8 | 39.9 | 19.2 | 22.6 |
| 35–44 | –941 | –5.5 | –6.3 | 22.1 | 17.4 |
| 45 and over | 4,440 | 15.2 | 29.1 | 37.3 | 36.0 |

*Source:* Based on U.S. Department of Labor, Bureau of Labor Statistics, Special Labor Force Report, "Labor Force Projections, by Color, 1970–1980," *Monthly Labor Review*, September 1966.

entire increase in the working population in the decade, and their proportion of the labor force will go up from 19.2 percent to 22.6 percent during that time.

The very next adjacent age group, 35–44 years, will go down by 941,000, a drop of 5.5 percent, contributing a *minus* 6.3 percent to the labor force change of the period; they will account for 17.4 percent of the 1975 labor force, as against 22.1 percent in 1965.

7. The decade is also witnessing another event in the field of labor force developments. Women workers will increase much more than male workers between 1965 and 1975, as women come into the job market in higher and higher numbers and proportions. In fact, the female labor force will rise by about 25 percent, more than half again as large as the corresponding upturn of about 16½ percent among the men. As the figures in Table 4 show, the rate of labor force growth for women is projected to be higher than that for men for both whites and nonwhites and for just about every age group.

By 1975, there will be more than 33 million women workers in this country, representing nearly 36 percent of the American labor force.

8. Finally, the nonwhite labor force will be going up much faster than the white component during this decade. Between 1965 and 1975 the number of nonwhite workers will be moving up by about 26 percent, in comparison with an 18 percent rise among the whites.

One of the constant refrains which runs through all descriptions of the manpower story for the 1965–1975 period is how different it is going to be from what it was in earlier years. Actually, the differences are vast, and they underscore the significantly altered problems the upcoming decade's events pose and the changing policies and programs they may require.

For example:

The net labor force increase among workers under 25 in the period 1965–1975 is going to be about 15½ times what occurred between 1950 and 1960.

In the age group 25–34 there was actually a *decline* of 50,000 workers during the 1950s. By way of contrast, there will be more than a 6 million increase in the labor force of this age category taking place during the interval between 1965 and 1975.

And, of course, the reverse story is true for the age group 35–44. In the 1950s there was a rise of about 2¾ million workers of those ages. The current decade is seeing a *decline* of about one million workers in that age category.

## *Some Implications*

This brief sketch of our manpower future has emphasized some of the major changes in the size and composition of the nation's labor supply coming up in the immediate years ahead. By the same token it also points to what may be in store for the economy in terms of demands for goods and services.

The growing teenage population and work force already has made an enormous impact on the kinds of recreational activities, TV programs, consumer goods, and education being demanded. As we have seen, the rise in the work force among those in their twenties will bring a very substantial increase in the number of married couples and consequent demands for apartments, house furnishings, and the like. Similarly, the upturn among the elderly will bring even larger needs for a variety of medical services, retirement communities, and so on than we have had up to now.

The manpower future also has to be viewed against the effects generated by the different patterns of growth and decline among the various age groups. For example, the lessening number of workers 35 to 44 years of age now taking place in this country can put a significant manpower strain on various sectors of the economy. This is exactly the age group from which organizations, whether business, government, or academic, select their higher-rank personnel. At these ages, men and women already have a substantial amount of work experience and thus furnish the supply of executives, professors, and administrators. Yet, this is the group going *down* in numbers, and some of the manpower shortages currently present in a wide variety of fields stem from this fact.

Not very far behind them, however, are those in the younger age groups where the supply situation is just the reverse. A proper manpower design on the part of the business community in the manner in which they recruit, train, and use their people and on the part of government, given the right kinds of economic programs and policies, could arrange to accelerate the career development of the younger workers and help meet manpower needs caused by shortages among their older counterparts.

It should also be noted that, overall, the ten years ending in 1975 add up to a requirement for 1½ million more jobs *annually* just to absorb the rise in the labor supply; and this leaves no room for needed offsets to any job displacement which may take place due to advances in technology or for reducing unemployment below current levels.

All these population and manpower changes, when added to other forces affecting the demand for goods and services, eventually add up to a pattern of employment by industrial sectors and occupational groups. Here, too, recent events have seen some dramatic changes which the following chapters review.

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# CHAPTER III

## *The Industrial Scene*

Tens of thousands of different kinds of goods and services are produced in the United States every year. Each is produced in and by a specific sector of the American economy where the needed land, capital, entrepreneurial know-how, and labor are brought together for that purpose. All over the country, in factories, mills, stores, banks, office buildings, schools, mines, the production of these goods and services takes place.

Each of these producing sectors is known by the more familiar term of *industry,* which includes all the firms or establishments putting out the same kind of products. There are hundreds of these industries, but common practice aggregates them all into nine major industry divisions, for which a great deal of information on employment, hours of work, and earnings is made available each month. They include:

1. Agriculture
2. Mining
3. Contract construction
4. Manufacturing
5. Transportation and public utilities
6. Trade
7. Finance, insurance, and real estate
8. Service
9. Government

Since these nine will be discussed at some length, a few additional words of description are given here for each.

The first two represent the extractive industries in this country: *agriculture,* including the production of all food, feed, and fiber, and *mining,* involving all items taken from the ground, ranging from iron ore to coal to gold to uranium to copper, lead, and zinc.

*Construction* includes everything literally built—more than a million homes a year, all the office buildings, apartment houses, bridges, schools, highways; and *manufacturing* (the biggest industry division of them all) embraces the factory sector of the American economy, producing the steel, furniture, machinery, electrical equipment, autos, food products, textiles and clothing, chemicals, petroleum, rubber and leather products, instruments, and the rest of the cornucopia of articles that have come to be associated with this country's standard of living.

These first four major industry divisions are together known as the *goods-producing* sector of the economy. Whether it be a bushel of wheat or a ton of steel, a television set or a microscope, a refrigerator or a ton of coal, a package of dry cereal or a suit of clothes, an eight-room house or a pair of gloves—a tangible, physical good emerges as the end result of the production process of these industry divisions.

*Transportation and public utilities* is a combination of the utilities sector of the economy, covering the railroads, buses, trucks, and airlines and the gas, electric, telephone, and telegraph companies.

*Trade* covers all buying and selling at both the wholesale and retail levels, while *finance, insurance, and real estate,* as the description implies, refers to employment in the banks and other financial enterprises of the country, all the insurance companies and real estate activities, including speculative builders. The *service* sector includes the whole gamut of personal service activities such as shoe repair, dry-cleaning and laundry establishments, the entertainment fields, private hospitals, and private educational and recreational facilities.

Finally, *government* covers all public service at the federal, state, and local levels, including cities, counties, boroughs, sanitary districts. In other words, government employees include not only the President of the United States and the local mailman but also the fireman, policeman, and public school teacher.

These last five major industry divisions are together known as the *service-producing* sector of the economy. Whether it be an airline ride or a two-hour movie, a haircut or a history lecture, the signing up for a $10,000 insurance policy or the purchase of a ten-cent cigar, a long-distance telephone call or a newly mown lawn—the hallmark of these activities is the provision of some specific service.

Almost forty years ago, just before the Great Depression, the industrial scene was dominated by the goods-producing sector. This was the industrial deployment of the American working population in 1929:

| *Goods-Producing Industries* | | *Service-Producing Industries* | |
|---|---|---|---|
| | (In thousands) | | |
| Agriculture | 10,450 | Transportation and public utilities | 3,916 |
| Mining | 1,087 | Trade | 6,123 |
| Construction | 1,497 | Finance, insurance, and real estate | 1,509 |
| | | Service | 3,440 |
| Manufacturing | 10,702 | Government | 3,065 |
| | 23,736 | | 18,053 |

The goods-producing sector employed about a third more workers than the service-producing sector. Of the more than 40 million wage and salary workers in 1929 (these tabulations omit such groups as the self-employed, domestics, and unpaid family workers except for those on the farm), one in four was in agriculture alone. In fact, agriculture and manufacturing—the two prime examples of goods-producing activities—accounted for one out of every two workers in 1929. All the employment in the service-producing sector, put together, totaled 3 million less than in those two goods-producing industries.

Since then, the service-producing sector has been gaining on the goods-producing counterpart. In the first part of the 1950s they were even, and it has not been a race since. By 1965, the industrial scene looked like this:

| *Goods-Producing Industries* | | *Service-Producing Industries* | |
|---|---|---|---|
| | (In thousands) | | |
| Agriculture | 4,585 | Tranportation and public utilities | 4,033 |
| Mining | 632 | Trade | 12,687 |
| Construction | 3,181 | Finance, insurance, and real estate | 3,019 |
| | | Service | 9,098 |
| Manufacturing | 18,032 | Government | 10,091 |
| | 26,430 | | 38,928 |

After all these years, the total for the goods-producing sector was not far different from what it was in 1929. Two of its four major industry divisions (mining and agriculture) have experienced substantial declines during this interval of time, while two of the five major industry divisions (trade and finance) producing services have doubled their job totals, and another two (government and services) have tripled their employment.

Today, the difference between the two sectors is double what it was in 1929, but the difference has been completely reversed in favor of the service-producing sector, which accounts for 60 percent of the workers, not far from the proportion of employment for which the goods-producing sector accounted in 1929.

No set of facts in the job field is more important than the one pointing to this kind of upending of the industrial structure. It has affected trade-union organization and membership (much stronger in the goods-producing sector), income structure, occupational opportunities for youth, the geography of jobs, education and training prerequisites for employment, and much more. It is the basic framework for a large part of the discussion to follow in this volume.

## *The Industrial Future*

Industrial job prospects, by the same token, are an area of major concern. What the future holds depends in good part on what the international situation will be like and how well we do in sustaining economic growth and maintaining high employment and the pace of technological change. It will also depend on how much and to what ends the country decides to allocate its resources. Decisions which emphasize, for example, more funds for education, urban housing, and antipoverty measures will generate one kind of industrial pattern; decisions which put relatively bigger resource allocations in space and supersonic transport will result in another pattern.

How we give effect to our needs and goals and aspirations usually ends up as a mix of all these programs, unless the time period involves a traumatic event such as a war or depression. In looking already to 1975, the projections that have been made postulate the absence of such traumas and assume a generally high level of economic activity and employment and a continuation of advancing technology. More specific assumptions are made in connection with the appraisal for each industrial sector, as will be seen below.

In general, the immediate years ahead are going to see a continuation and, in some of the fields, an acceleration of past trends toward the service-producing industries and away from their goods-producing counterparts.

Specifically, the story for each of the nine major industry divisions involves the following. (Table 6 gives some of the relevant data.)

*Agricultural employment* is expected to continue its decreasing course until 1975, even with full employment, under the impact of continuing technological change which has made the farm sector the group with the biggest advance in output per manhour since the end of World War II. If this course of events actually takes place, agriculture will employ only about 3¾ million persons in 1975, in a setting even more akin to industry than now, replete with a variety of machinery, fertilizers, feed additives, and pesticides.

It should be emphasized that the projected decline in farm employment will be accompanied by an *increase* of one-fifth in agricultural output. Expanding size of farms (they have increased by over 60 percent since the end of World War II), more horsepower in tractors (which has gone up by about 175 percent since the last war), and greater application of plant

**TABLE 6** *Wage and Salary Workers in Major Industry Divisions*

Actual 1965 / Estimated 1975

| | EMPLOYMENT IN THOUSANDS | | CHANGE 1965–75 | |
|---|---|---|---|---|
| *Industry Division* | *1965* | *1975* | *Thousands* | *Percent* |
| ***Total*** | *65,358* | *79,620* | *14,262* | 22% |
| Goods-producing | 26,430 | 28,295 | 1,865 | 7 |
| Agriculture | 4,585 | 3,745 | −840 | −18 |
| Mining | 632 | 620 | — | — |
| Contract construction | 3,181 | 4,190 | 1,009 | 32 |
| Manufacturing | 18,032 | 19,740 | 1,708 | 9½ |
| Service-producing | 38,924 | 51,325 | 12,401 | 32 |
| Transportation and public utilities | 4,033 | 4,425 | 392 | 10 |
| Trade | 12,683 | 16,150 | 3,467 | 27 |
| Finance, insurance, and real estate | 3,019 | 3,725 | 706 | 23 |
| Service | 9,098 | 12,275 | 3,177 | 35 |
| Government | 10,091 | 14,750 | 4,659 | 46 |

*Source:* Based on 1965 data from U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings and Monthly Report on the Labor Force;* 1975 data from National Commission on Technology, Automation and Economic Progress, *The Outlook for Technological Change and Employment,* Appendix Vol. I (Washington, D.C.: Government Printing Office, 1966). Data for agriculture include self-employed and unpaid family workers.

nutrients to the soil (which have more than quadrupled in the post–World War II period) will account for rising output with fewer workers.

It also has to be noted that the work force which does remain on the farm is expected to differ significantly from what it has been so far. Some of the occupations in agriculture may actually increase in numbers; for example, among those who work at crop-dusting and machine harvesting. And it will also take more knowledge and skill to work on the farm. As the report to the 1966 National Commission on Technology, Automation, and Economic Progress said (see footnote to Table 6):

> The farmer will be faced with increasingly complex decisions in finance, equipment purchase, soil conservation, crop and livestock selection and degrees of specialization, and manpower requirements. His employees will no longer be hired only because of their physical abilities, but also because of their technical knowledge and other skills.

The only goods-producing industry scheduled to rise at more than the national average rate is *construction.* This is expected to occur because of the population increases of recent years and the continuing movement of families from farms to cities to suburbs. Government expenditures are also expected to be heavy in the construction field, especially for highways, schools, and hospitals. If economic growth continues, as is assumed in all these projections, then a good deal of construction activity is anticipated in the business and commercial sectors as well, such as stores, factories, banks, office buildings. All in all, the United States Department of Commerce expects expenditures on new construction to almost double in the interval 1960–1975; this will also mean a substantial expansion of construction maintenance and repair, which usually runs at almost one-third the volume of new construction.

Under these conditions, construction employment will move past the 4 million mark in 1975, putting it ahead of farm employment for the first time in our history. All these developments also are expected to take place in a climate of increasing productivity highlighted by the use of huge cranes and bulldozers with power steering and power transmission, cordless electric drills and high-speed nailing machines, motorized wheelbarrows, prepackaged wiring systems and plumbing "trees," module building lift-slab construction, and computerized work planning.

In *manufacturing*, expansion is expected to add up to a rise of about 10 percent between 1965 and 1975. This is one major industry division with substantial fluctuations associated with changes in business activity and the state of international relations. It is also one where technological change has had and is expected to continue to have a relatively large impact on manpower requirements for desired levels of production. The fact that the factory sector's employment growth is projected to be less than the national average does not mean that manufactured goods will be produced at a slower rate, but that the output which does take place is going to be made available under conditions of advancing technology and reduced manpower per unit of production.

Manufacturing is the biggest industry of all, and there will be many significant developments among its individual components, which vary all the way from the production of ordnance to autos to clothing to cigarettes. Some of the individual industries employ as many as 1¾ million employees; others have less than 100,000 on their payrolls.

The 21 industry groups which together make up the manufacturing sector of the American economy are listed in Table 7. Shown are their employment record up to now and what their expectations are for the future. These materials underscore the enormous variety of experiences which different industries, even within one major economic sector, can have over a relatively short period of time.

During the postwar period prior to the middle of this decade, employment changes varied all the way from a 50 percent increase for electrical machinery plants to a sharp drop of 31 percent among firms in the textile industry (we omit the change in the ordnance group which obviously has been affected by the developments in Vietnam). Eight out of the 21 industry groups in manufacturing declined in employment between 1947 and 1964, a time of substantial economic growth.

Included in the declines were the *food* industry where automatic equipment for grading, weighing, and packaging foods as well as instant pasteurization has affected employment; such continuous-process, highly mechanized industries as *tobacco, petroleum,* and *steel,* the latter with its relatively new basic oxygen process; and *textiles,* which experienced an employment decline of almost one-third while increasing its production by 45 percent. For seven out of the eight industry groups which declined in employment up to now, further declines or a standoff in jobs is the projection for 1975.

On the other side of the ledger are such industries as *furniture,* scheduled for a big job increase on top of its performance up to now because of increasing population and family formation; the *instrument* industry, which produces significant amounts of materials used by advancing technology; and the *chemicals* sector, which can expect to go up by more than 24 percent by 1975 after an employment increase at triple the national rate between 1947 and 1964. This is an industry which has grown on the basis of a tremendous variety of new products, such as plastics, synthetics, and petrochemicals. It is estimated that about half of the products of the industry were not even in production about 25 years ago.

**TABLE 7** *Employment of Wage and Salary Workers in Manufacturing by Industry Group 1947–1975*

| | % CHANGE IN EMPLOYMENT | EMPLOYMENT (000) | | % CHANGE IN EMPLOYMENT |
|---|---|---|---|---|
| *Industry Group* | 1947–64 | *1965* | *1975* | 1965–1975 |
| *All manufacturing* | *11%* | *18,031* | *19,740* | 9½% |
| Durable goods industries | 17 | 10,386 | 11,500 | 11 |
| Ordnance | 15 | 226 | 250 | 11 |
| Lumber and wood products | –27 | 610 | 550 | –10 |
| Furniture and fixtures | 21 | 429 | 510 | 19 |
| Stone, clay, and glass | 14 | 627 | 675 | 8 |
| Primary metals | –4 | 1,296 | 1,290 | — |
| Fabricated metals | 20 | 1,268 | 1,460 | 15 |
| Machinery | 17 | 1,726 | 2,050 | 19 |
| Electrical equipment/supplies | 50 | 1,658 | 2,000 | 21 |
| Transportation equipment | 26 | 1,738 | 1,730 | — |
| Instruments | 38 | 387 | 510 | 32 |
| Miscellaneous | –5 | 421 | 475 | 13 |

| | | | | |
|---|---|---|---|---|
| Nondurable goods industries | 7 | 7,645 | 8,240 | 8 |
| Food | –3 | 1,752 | 1,665 | –5 |
| Tobacco | –25 | 87 | 80 | –8 |
| Textile mill products | –31 | 921 | 880 | –4 |
| Apparel | 13 | 1,354 | 1,525 | 13 |
| Paper | 34 | 640 | 775 | 21 |
| Printing and publishing | 31 | 981 | 1,100 | 12 |
| Chemicals | 35 | 906 | 1,125 | 24 |
| Petroleum | –17 | 182 | 160 | –12 |
| Rubber | 34 | 471 | 580 | 23 |
| Leather | –15 | 351 | 350 | — |

*Source:* 1949–1965 data from U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings and Monthly Report on the Labor Force*, and 1975 data from National Commission on Technology, Automation, and Economic Progress, *The Outlook for Technological Change and Employment*, Appendix Vol. I (Washington, D.C.: Government Printing Office, 1966).

In *mining*, the remaining goods-producing major industry division, the projections call for practically no change in total employment, although output is expected to rise considerably (Table 6). Here, too, enormous advances in technology as well as changing consumer preferences have brought the entire sector's employment down to less than two-thirds of a million workers.

The end is not in sight for technological advances in the major components of the mining industry. Increased use of LACT (lease automatic custody transfer) systems which automatically pump, sample, and move crude oil from wells to treating stations to pipelines is bound to affect the employment of workers in the ore and gas industry, as is the use of self-advancing roof supports in underground coal mining.

Mining technology does not necessarily move only in the direction of reducing manpower requirements. An outstanding example to the contrary is the recent progress in making low-grade mineral deposits economical; for example, in beneficiating techniques which make possible a doubling of the high-grade ore content in taconite, or offshore drilling techniques which permit oil recovery from underwater resources. These developments, incidentally, not only involve more mine workers but put the emphasis on professional personnel such as chemists, engineers, and metallurgists.

Moving to the service-producing industries (Table 6), the data show that with the exception of the *transportation and public utilities* components, all are expected to increase their employment in the next ten years at a rate above the national average. What makes the utilities group's rate of growth relatively low is the anticipated continued decline in the railroad industry; other transportation groups such as air and trucking are expected to show much more vigorous employment growth. Demand will also move sharply up in the communications sector (telephone and telegraph) and in the other public utilities such as gas and electricity; but growing demand for these services will be met by greater productivity rather than by increasing employment.

This is a sector to watch, in fact, as changing markets and technology make their impact not only on numbers of jobs but on the nature of the work to be done. Second-generation electric diesels with horsepower ratings of 2,500, supersonic air transports, and communications satellites have crossed the threshold from science fiction to actual models and even day-to-day applications.

The expected rapid growth in *finance, insurance, and real estate* is predicated on a very substantial rise in the demand for various banking and insurance services and is expected to take place even with the greater rise of automation in the form of electronic data processing. Fundamental to the growth in the industrial sector is the enormous demand for insurance, which more than tripled between 1947 and 1965 and is now well on its way to the trillion-dollar mark; the significant upturn in the use of checking accounts by business and individuals; the surge in consumer credit and securities users; and, of course, the rise in home building and other construction activities which have generated increases in the number and size of real estate firms. Since about half of all the employees in this sector are women, these trends are of special significance for the female part of the labor force.

In the service-producing constellation, the *service industry* division is peculiarly significant since it provides the direct kind of personal services, the demand for which is expanding almost without end. It is here that the projections call for about a 35 percent rate of growth, on top of the expansions of the postwar period, by 1975. Particularly significant employment increases are looked for in the medical and health service fields, hotels and other businesses involved in the travel and recreation complex, and the private educational sector.

Factors which will bring about this kind of change include the growing population, which, just in sheer numbers, provides a hugely increased base for demand of person-to-person services; substantial rises in income and levels of living which serve as a point of vantage for swelling demands in these fields; the growth in medical plans for an expanding sector of the population, both old and young; the big upturn in travel, in eating out, in entertainment and other leisure-time activities; and increasing educational services, again across the age scale and throughout the country.

In this kind of arena, technological change does not have much effect on employment because of the personal touch involved in most of the work. Not that this field is immune to the impact of technological advance. The pin boy has just about disappeared from the bowling alleys; there are home permanents; and there is a growing use of disposable surgical gloves, caps, and so forth which may dampen the demand for workers with laundry and sterilization duties in hospitals. But a good deal of the technology works the other way, and growing numbers of workers will be needed to apply the new and improved techniques of medicine and education.

Most people have to look at least twice before getting the full significance of the employment figure for *trade*. The fact is that the field of buying and selling at wholesale and retail is the second largest employer of people in the United States. It accounts for one out of every five wage and salary workers outside of agriculture. This is a field where such developments as vending machines and self-service activities, as well as the use of computers for inventory and billing purposes, may make a dent on employment growth; but it is still scheduled to move up by more than the national average by 1975. This is a sector of job opportunities which has another significance. As has been true in the past, future employment growth in trade will abound in part-time jobs, an important factor for women and young workers.

The *government* division has been left for last in this discussion because it summarizes, in its past and expected trends, a good deal of the substantive discussion of this chapter. Government employment has increased at double the national average for all nonfarm jobs since the end of World War II. Already, more than one out of every six nonfarm wage and salary workers is a government employee.

It is important to note that most of this growth and the expected rise of almost 50 percent between 1965 and 1975 relate to state and local government and not federal employment. About three out of every four government employees work at the state and local levels. By far the greatest growth has been in the field of public education; in fact, one out of every three state and local government employees operates in the educational arena.

There is an important reason why all this growth has occurred at the local level. This is where the people are, and this is where the services we have been talking about are rendered—teaching, fire and police protection, hospitalization, housing, provision of streets and roads, sanitation, and so on. There is nothing in the offing which indicates any diminution in the demands for these services. In fact, the prognosis is for even greater demand, not only for more and more, but for better and better—better schools, better hospitals, better roads, better housing.

In concluding this chapter, note should be taken of the fact that each of these major industry divisions is a large aggregation of many individual sectors whose prognosis has to be examined in detail when points of decision such as those involved in career guidance are involved.

Note should also be made of the fact that in many cases the future course of an industry may be one of a declining *proportion* of total employment, but one which may still call for increasing *amounts* of jobs as the population and the labor force rise.

But the sweep of events in the industrial history of the United States seems inexorable. The increase in the number of jobs in the service-producing sectors is projected to be about seven times as great as in the goods-producing areas by 1975. The increase scheduled just for trade is double that of all manufacturing industries put together. If all of this comes out anywhere near the projected levels, then all workers producing services in 1975—those carting the materials around, those buying and selling, giving mortgages and taking bank deposits, teaching and policing and making employment estimates for the future—will exceed the number of their colleagues in the goods-producing industries by 80 percent.

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# CHAPTER IV

## *The Occupational Standings*

From an economic point of view, the industrial deployment of the working population is a matter of primary importance. Its complement, the occupational distribution of workers, is just as important and describes what the individual actually does on the job in the industry in which he works.

Occupations, of course, cut across industrial lines. An M.D., classified as a professional person, can work in the field of occupational safety for a chemical firm (manufacturing) or perform research at one of the National Institutes of Health (government) or engage in private practice (service). An electrician, classified as a skilled craftsman, can work on a house being built on contract for a person (construction) or be on the maintenance staff of a large department store (trade) or operate in the power transmission plant of an electric company (transportation and public utilities). In each case, the industry is descriptive of the economic sector in which he is employed, and the occupation is descriptive of the nature of the work he performs in that sector.

The revolution which has upended the industrial structure has been more than matched by the changes in the occupational distribution of the economically active population.

Occupations can be grouped in a variety of ways; one of the more meaningful includes a fourfold classification into white collar, blue collar, service, and farm jobs. Each of the four has performed differently during the twentieth century.

The white collar and farm fields have reversed positions on the occupational scale since 1900. Farming, accounting for more than one out of every three American workers, represented the largest occupational sector at the turn of the century, and the white collar group represented the smallest, accounting for a little short of one out of every five workers at that time. Today, the farm group is the smallest; its proportion of all American workers has declined to a little over the 5 percent mark. The white collar jobs have taken the lead and now provide employment opportunities for about 45 percent of all workers.

In between have been the other two occupational sectors. The industrial blue collar field has remained relatively stable in the proportion of workers it includes, at a little over one-third. In the service category, the proportion has moved up somewhat as a result of the long-run increase in personal service occupations which counterbalanced a decline in private household (domestic service) work.

Over the long run, the summary trends have looked like this:

| | 1900 | 1965 |
|---|---|---|
| *Total Employment* | *100%* | *100%* |
| White collar jobs | 18 | 44 |
| Blue collar jobs | 36 | 37 |
| Service jobs | 9 | 13 |
| Farm jobs | 37 | 6 |

### *Future Prospects in White Collar Work*

Among the white collar workers, two groups are responsible for the enormous advance over the long term and the significant changes to 1975.

The first is represented by the *professional and technical personnel,* who have tripled their share of jobs in the past sixty years, who already account for about one out of every eight United States workers, and who are expected to go up in numbers by almost 50 percent between 1965 and 1975—more than double the overall national rate of increase for all sectors expected during that interval of time (Table 8).

Just about every individual occupation in the professional and technical area, which includes everyone from accountants to zoologists, is expected to share in this job upturn. For example, technological advance and increasing work in research and development are primarily responsible for the twentyfold increase in the number of *engineers* since 1900. Their employment rose by 80 percent just between 1950 and 1964. Continuation of these trends calls for another increase of more than 50 percent in the employment of engineers between 1965 and 1975 alone. Engineering, incidentally, is the largest employer of professional personnel among men.

*Scientists,* especially with doctorates and above all those operating in the interdisciplinary areas such as oceanography and biophysics, are expected to show particularly large employment increases during this decade.

*Technical personnel,* particularly engineering and science technicians, have seen an upward surge in their employment in the post–World War II period. Between 1965 and 1975, these technicians are ex-

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**TABLE 8** ***Employment by Major Occupational Group***

Actual 1965 / Estimated 1975

| | EMPLOYMENT (000) | | CHANGE/1965–75 | |
|---|---|---|---|---|
| *Occupational Group* | *1965* | *1975* | *000* | *%* |
| *Total* | *72,177* | *88,700* | *16,523* | *23%* |
| White collar | 32,104 | 42,800 | 10,696 | 33 |
| Professional and technical | 8,883 | 13,200 | 4,317 | 48 |
| Proprietary and managerial | 7,340 | 9,200 | 1,860 | 26 |
| Clerical | 11,166 | 14,600 | 3,434 | 31 |
| Sales | 4,715 | 5,800 | 1,085 | 23 |
| Blue collar | 26,466 | 29,900 | 3,434 | 13 |
| Craftsmen | 9,221 | 11,400 | 2,179 | 24 |
| Operatives | 13,390 | 14,800 | 1,410 | 10 |
| Laborers | 3,855 | 3,700 | –155 | –4 |
| Service | 9,342 | 12,500 | 3,158 | 34 |
| Farm | 4,265 | 3,500 | –765 | –18 |

*Source:* 1965 data from U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings and Monthly Report on the Labor Force*; 1975 data from National Commission on Technology, Automation and Economic Progress, *The Outlook for Technological Change and Employment*, Appendix Vol. I (Washington, D.C.: Government Printing Office, 1966).

pected to increase their employment to about one million, an increase of two-thirds for the decade.

More than one out of every four people in this country are enrolled in school or college, and in *teaching* (the largest profession) the population trends already reviewed point to increasing employment at all levels—elementary, secondary, and college. By 1975, about 2¾ million teachers will be employed, a rise of about one-third from 1965. The differential impact of varying birthrates in the past is shown by the fact that enrollments are expected to rise between 1965 and 1975 by 8 percent in elementary schools, 28 percent in high schools, and 75 percent in colleges.

In the medical field, including *physicians, dentists,* and *nurses,* the outlook also is for substantial growth under the combined impact of population trends with their greater proportions among the young and old, rising living standards, and new legislative programs in health insurance. Employment growth among doctors will be limited only by the capacity of the medical schools, and among nurses (the largest profession in the health field) employment is expected to rise by about 50 percent in the decade 1965–1975.

The rising trends among professional personnel (upturns of about 30 percent among *accountants,* 40 percent among *draftsmen,* and 60 percent among *chemists* are additional illustrations for individual occupations of the expected movement between 1965 and 1975) can be traced in substantial part to familiar demand-spurring forces of population and improved living standards.

However, another factor is expected to operate with major implications for increasing professional employment. This is an arena where technological developments will tend to raise the demand for manpower in most fields and even create new occupational categories. Thus, the new technology of medicine enhances the need for a wide variety of technical personnel specializing not only in laboratory and x-ray work but in the operation of new and complex electronic devices; the vast output of computers applied to financial data will call for more trained accountants to initially prepare the input of the information, oversee its processing, and assess the information output for purposes of administration, management, and decision making; technological development is the prime reason for the outlook for increasing demands for engineers, if only in the fields of computer technology, nuclear energy, and space technology.

Finally, the professional person is in the mainstream of the huge recent additions to legislation affecting the services he provides. From expansions in our space efforts and urban housing, to new programs in health varying from medicare to regional centers of excellence in cancer, stroke, and heart-disease care and prevention, to the multibillion-dollar efforts carried by the Elementary and Secondary Education Act of 1965—all call for more, in numbers and quality, of professional and allied personnel.

The second group in the white collar field with a substantial thrust in employment is the *clerical* category. In fact, this has been the fastest-growing occupation group in the United States, up fivefold since the turn of the century. The enormous growth of paper work, record keeping, and communications has helped move this job field to high levels, and the outlook is for another 31 percent increase from 1965 to 1975, second only to the professional and allied workers in the white collar field for that period of time. Secretaries and stenographers (up by fifteen times between 1900 and 1960), bookkeepers, cashiers, bank tellers, telephone operators, and shipping clerks are examples of specific occupations in this arena. One limitation on employment here will be among those in repetitive and routine work such as filing, sorting bank checks, making up inventories or payrolls. This is where the computer and bookkeeping and other calculating machines are expected to make important inroads on jobs.

The two other groups within the white collar class are expected to move up by 1975 at just about or a shade above the national average. Both were job fields which expanded significantly in past years. The *sales* occupations rose in line with what happened in trade, as reviewed in the last chapter. Self-service techniques and other labor-saving devices such as vending machines will have an impact on this field of work, but expanding population, new product development, and income rises are expected to outweigh these factors and generate a continued increase in sales employment. In the *proprietary and managerial* fields, the expected trends will vary with the specific field. The proprietors or owners of their own businesses will show relatively smaller growth, with the continued trend toward the formation of bigger corporative enterprises. Expanding business opportunities, however, are expected in small franchise, owner-operated enterprises. The salaried managerial group should go on moving up in the immediate years ahead, especially among management specialists such as department store buyers and department heads, purchasing agents, hospital administrators, and middle management personnel capable of handling, supervising, and using the automatic data-processing systems and their output.

## *The Blue Collar Worker*

Among the industrial blue collar workers, the three major groups have moved in significantly different fashion. The *craftsmen* group represents the skilled American worker, whose proportion of the work force has remained relatively stable over the years, as it is projected to do until 1975, as his employment moves up at about the national average. Specific occupations within this group do grow and decline, of course. For example, in 1900 there were six skilled trades—engravers, locomotive engineers, brickmasons, blacksmiths, metal molders, and shoemakers—which together accounted for 20 percent of all the craftsmen; today, they include only 5 percent.

On the other hand, in 1900 there were six skilled trades—carpenters, mechanics and repairmen, cranemen and stationary engineers, plumbers, electricians, and telegraph and telephone linemen—which together accounted for less than 40 percent of the craftsmen; today they come closer to 65 percent.

Looking ahead, most of the growth among the skilled blue collar workers will occur among mechanics and repairmen, metalworkers, building trades craftsmen, and foremen. The demand is expected to be particularly heavy for the mechanics and repairmen group, needed to install, maintain, and repair the vast amount of equipment in business, industry, and the homes. Anyone who has recently looked for "a good mechanic" for his auto, washing machine, or television will attest this demand. Tool and diemakers as well as instrument makers are examples of the elite among the craftsmen, and these metalworkers are expected to represent expanding job fields in the future. The same goes for such trades as operating engineers, plumbers and pipefitters, bricklayers, sheet-metal workers, and electricians in the construction field, and for foremen generally—the last having moved up to the one million mark in 1960, a 40 percent rise from 1950.

The skilled worker and his job prospects warrant a further word. The emphasis usually put on the white collar fields (as has been done so far in this chapter) often obscures the excellent outlook and, in fact, the great need for people with a craft in this country. The skilled craftsman occupies a critical position in a technological society, and a quality worker in this field has substantial job security and occupies the higher rungs of the earnings ladder. The United States needs and is expected to continue to need as many manually talented people as it does academically talented.

For the *semiskilled* industrial worker, the outlook is for a relatively small increase in numbers, resulting in a declining proportion of the work force by 1975. As can be seen from Table 8, the *operative,* as the semiskilled worker is called, represents the largest major occupational group, as might be expected in a primarily industrial society. Employment has risen substantially in past years as the United States became industrialized and mass-production factory methods were introduced. For millions upon millions of Americans, including tremendous numbers from farm areas, the semiskilled sector represented the great arena of job opportunities. In more recent years, automation and technological change have altered this growth; and this is the reason why projections to 1975, while showing a numerical increase of less than 1½ million from 1965, indicate a rate of growth less than half the national average.

The operative group is particularly sensitive to two major forces. One is the overall level of economic activity. For example, the number of operatives employed in 1947 amounted to 12,274,000. With the exception of the boom year of 1954, it never reached that level again until 1964, under the impact of very high rates of economic growth.

The other is technological advance, which bears with substantial force on the semiskilled worker who is directly affected by the whole range of automatic devices and machines. Assemblers, for example, are one of the more numerous worker groups in the semiskilled category, accounting for more than half a million people. Employment requirements for them will be considerably dampened by increasing use of everything from automated assembly lines to printed electric circuits. Another employed group of more than a half-million, the inspectors, are and will be affected by various automated sensing and feedback equipment which can scrutinize and report on the production process.

Incidentally, if the projections depicted in Table 8 are on the mark, the semiskilled or operative group will be very close to losing its role as the largest occupational group in 1975. It will be almost tied in the occupational standings with the fast-growing clerical group—another indication of the changing roles of white and blue collar workers in the United States.

For the *unskilled* industrial worker (*laborers*) the outlook is significantly and substantially different—and quite dim. It represents an occupational group in the nonfarm area which actually went down since 1900; it now accounts for only about one in twenty workers (as against one in eight at the turn of the century); it is the only nonfarm major occupational group not scheduled for numerical increase by 1975. This is the group which is the example *par excellence* of the replacement of manual labor by machine work—in excavating, ditch digging, and comparable work in construction; in fork-lift trucks, derricks, cranes, conveyer belts, and so on in materials handling.

The white collar–blue collar shift is even significantly affecting what is the typical arena for the manual worker—manufacturing, or the factory sector of the American economy. In 1950 a little less than 18 percent of all factory workers were so-called "nonproduction workers"; these include the office and clerical staffs, executive, advertising, and legal personnel, and all the rest who do not actually work on the production line. By 1965, this proportion was up to 26 percent. Thus, by the mid-sixties, one out of every four workers employed in manufacturing was *not* a production worker (defined as the manual workers, from the foreman down, who operate the actual production process).

Finally, the major occupational group, *service,* is in for a very substantial rise by 1975. This is a very important category of employment for the future because it includes millions of jobs which people with relatively low levels of educational attainment can fill. Not that educational and training prerequisites for employment in this field are not going up, as in all sectors, but they are lower than for most other groups, and the service occupations are going to be a prime employment opportunity field for many educationally disadvantaged people. Included in this group are practical nurses and attendants in hospitals, protective service workers such as guards, waiters and waitresses, cooks and chefs, hotel service workers, and the like. Employment of service workers, up by about 55 percent between 1947 and 1964, is scheduled for another rise of one-third between 1965 and 1975.

The differential occupational trends among men and women are also interesting and significant in terms of job prospects. Table 9 tells the story. It is important to note that blue collar work is still the predominant job field among the men. Running first and second, and almost in a tie, are the semiskilled (*operatives*) and skilled (*craftsmen*) occupational groups, which together accounted for about two out

**TABLE 9** *Occupational Standings of Men and Women 1965*

| | |
|---|---|
| ***Men*** | |
| *Total* | *100%* |
| Operatives | 21 |
| Craftsmen | 19 |
| Proprietors and managers | 13 |
| Professional and technical | 12 |
| Farm | 7 |
| Laborers | 8 |
| Service | 7 |
| Clerical | 7 |
| Sales | 6 |
| ***Women*** | |
| *Total* | *100%* |
| Clerical | 32 |
| Service | 24 |
| Operatives | 15 |
| Professional | 13 |
| Sales | 7 |
| Proprietors and managers | 4 |
| Farm | 3 |
| Craftsmen | 1 |
| Laborers | (a) |

(a) Less than 0.5%.

*Source: Manpower Report of the President, 1966,* p. 165. Details may not add due to rounding.

of every five male workers late in 1965. Noteworthy too is the fact that one out of every eight male workers is a professional or technical person (the corresponding proportion at the turn of the century was about one in thirty-three).

As Table 9 indicates, of the last five occupational groups in the standings, each accounts for less than 10 percent of the male workers, and together they make up only about one-third of the male labor force.

The front-running four occupational groups have a very substantial lead, accounting for the remaining two-thirds. At the turn of the century, the standings were almost exactly reversed. The four leaders of today accounted for only about one-third of the male work force at the time.

Among the women, the standings are quite differently constructed. One group stands out from all the rest: clerical jobs now account for 32 percent of all female employees, up 7½ times since 1900. In fact, together with the service occupations, they provide well over one out of every two jobs for women in the United States. Noteworthy, however, is the continuing importance of semiskilled (*operatives*) work among women. It accounts for about 15 percent of the jobs, mostly in the form of work on industrial machines. As is true among the men (although the job fields are different), the first four front-running occupational categories account for the preponderance of jobs, in this case for more than 85 percent of them in 1965.

## *Some Implications*

What people actually do is affected by a variety of changing forces. One of the most important, and one to which frequent reference has been made, is technological change which can alter the supply/demand relationship in any given field as well as the very nature of the work being done.

Some of the modifications in occupational patterns generated by changing technology have caused major reversals in some and major advances in other job fields even in the same industrial sector. In the railroad industry, employment dropped by 40 percent, or over 570,000, just between 1947 and 1960. Involved, particularly because of the change from steam to diesel locomotives, was an 82 percent drop among boilermakers and a 15 percent *increase* in electrical workers. At the same time, a 69 percent decline in unskilled section hands was accompanied by a 47 percent *increase* in semiskilled portable equipment operators.

In the petroleum refining industry, where employment declined slightly (by about 5,000) between 1950 and 1960, white collar and craft jobs actually rose, while unskilled employment fell from almost 10 percent of the industry's work force to a little over 5 percent.

One of the clearest and most marked effects of technology is found in still another industrial sector, the telephone industry, where employment rose by almost 100,000 between 1950 and 1960. But the number of telephone operators fell drastically (from 44 percent to 32 percent of total employment) as conversion from manual to automatic dial service took place. At the same time, skilled worker jobs rose, particularly among linemen, telephone installers, and repairmen.

Other factors, of course, also impinge on industrial and occupational patterns. They include population change, alterations in income levels and standards of living, legislation increasing and reflecting our concern with such issues as health, education, poverty, housing, discrimination, space, and defense.

The final mix of occupations which emerges as of any given time in turn also affects the employment outlook of specific groups in the population. The 1975 projections presented in this chapter illustrate this fact with great force for the following two sectors.

The *nonwhite* in America is presently concentrated in occupations subject to higher-than-average unemployment and in those occupations which will be growing at slower rates than the national average. At mid-decade, this was the picture:

| *Occupation* | *% Nonwhite* |
|---|---|
| *Total* | *11* |
| Professional and technical | 6 |
| Proprietary, managerial | 3 |
| Clerical | 6 |
| Sales | 3 |
| Craftsmen | 6 |
| Operatives | 12 |
| Laborers | 26 |
| Private household service | 44 |
| Other service | 21 |
| Farmers | 6 |
| Farm laborers | 24 |

*Source:* U.S. Department of Labor, Bureau of Labor Statistics, *Occupational Outlook Quarterly*, Vol. 10, No. 4 (December 1966).

The evidence is clear that while Negroes (who account for about 92 percent of the nonwhite total) have made some strides in recent years, they have a long, long way to go in the occupational rankings. In fact, they are lodged in disproportionate numbers in exactly those jobs where the outlook is mostly for less-than-average growth to 1975. In this day and age when the action is in the white collar arena, they make up about one out of every four farm as well as nonfarm laborers. More than 50 percent of all employed Negro women work as domestic servants or in such other service operations as chambermaid, cleaner, and cook.

Thus, the changing occupational distribution is operating against the Negroes in this country. If we hypothesize that they continue to hold jobs in the same pattern as they do now, the Negroes' share of total employment will actually go down by 1975.

Should this occur—that is, should the Negroes continue to hold the same proportion of jobs in each occupation in 1975 as they do now—their unemployment rate would be about double what it is now, and it is currently more than twice that of whites.

We must conclude, therefore, that Negroes in the United States simply have to score some major gains in the white collar and skilled ranks, especially through more educational and training opportunities and a reduction in discrimination, if we are to obviate an unemployment problem of the most severe kind in 1975.

Projections of occupational requirements by age also highlight some potential problems for the *younger and older workers.* If the current age distribution among the various occupational groups remains as the prevailing pattern to 1975, it will come face to face with the age distribution of the projected labor force sketched in Chapter II, as follows:

| *Age* | *Civilian Labor Force in 1975* | *Employment in 1975 under 1965 Occupational Patterns* |
|---|---|---|
| *Total* | *100%* | *100%* |
| 14–19 | 9.7 | 7.6 |
| 20–24 | 13.5 | 10.5 |
| 25–34 | 22.4 | 19.4 |
| 35–44 | 17.5 | 23.2 |
| 45–54 | 19.5 | 21.4 |
| 55–64 | 13.9 | 13.8 |
| 65 and over | 3.6 | 4.1 |

*Source:* National Commission on Technology, Automation, and Economic Progress, *The Outlook for Technological Change and Employment* (Washington, D.C.: Government Printing Office, 1966), I, 184.

Under these hypotheses, the potential shortfall in the age range 35–44, for example, as well as the potential surplus among the younger age groups, is clearly shown. Emphasized again are the manpower policies involving more education and training for the younger worker and his possible delay in entry into full-time work as well as the accelerated career development of the young when actually employed.

Changes in the numbers available for work and in the nature of the work being done have been accompanied by an equally striking change in the days and years of our lives spent in work. It is to this matter that the final chapter in this, Part One of the volume, now turns.

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## CHAPTER V

# *Life and Work*

At the turn of the century, a baby boy born alive could expect to live to age 48. Entering the job market in his early teens with an educational attainment only a little above grade school, he generally died with his labor force boots on. With life expectancy at such a relatively low age, retirement as practiced now was practically unknown.

At current rates, a baby boy born alive can expect to live to almost 67 years. Entering the job market toward the end of his teens, with an educational attainment a little above high school, he is expected to average more than seven years of his life in retirement.

These are just a few examples of what events during this century have wrought on the various facets of the length and pattern of our lives and working lives.

Perhaps most important of all has been the increase in life expectancy which, as already noted, has gone up by almost 19 years since 1900 among the men. This is an almost incredible rise of about 40 percent just in the very span of life. At today's rates, about one of every four baby boys born alive can expect to live to age 80.

Another revolves around the question of how these additional years of life have been deployed. It turns out that of the added years of life available to man today in comparison with his 1900 counterpart, about half have gone to an increase in the number of years spent in the labor force and the other half to more education and training before he enters into the job market, on the one hand, and time spent in retirement at the end of working life on the other.

All this adds up to a very important point. The three major functions which make up our lives went *up* during the twentieth century. The increase in life expectancy was so great that there was enough room to afford a substantial increase in the number of years as workers, side by side with an increase in the number of years spent outside the labor force altogether.

The picture for men can be summarized briefly as follows:

| | *Life Expectancy* | *Work-Life Expectancy* | *Years outside Labor Force* |
|---|---|---|---|
| 1900 | 48.2 | 32.1 | 16.1 |
| 1960 | 66.6 | 41.4 | 25.2 |

From the developments depicted by these few figures has emerged a completely different pattern of working life. For example:

. . . Young people, to begin with, now survive in much greater numbers to the point where they are of labor force age and can become economically active. For example, in 1900, 22 percent of all baby boys born alive were dead at age 15. At today's rates, only about 4 percent of a given cohort of male live births dies by age 15. Aside from being a priceless saving in human life, this is a change which represents an enormous economic gain for the country.

. . . Surviving to labor force age, men also put in about a decade more of work. The manpower potential of the nation is therefore increased significantly. The size of the increase in manpower resources available because of the increase in working life among males is shown by the fact that each group of 100,000 boys born alive and experiencing the current rates of mortality and labor force participation will actually put in a million more man-years of work during their lifetimes than did their 1900 counterparts!

. . . To be able to look forward to a ten-year increase in working life (an upturn of about a third since 1900) puts a different light indeed on the value of an education preparatory to work and on the value of a work career itself. An investment in education and training will now reap dividends for that much longer, and the "money value of a man," as the actuaries say, is incomparably higher.

. . . At the same time, the increased life span does leave more time for preparation prior to labor force entry. There are many reasons for the very substantial rise in educational attainment which has occurred over the years (see Chapter VII), but it is difficult to see how much of it could have taken place without the sheer increase in time made available by the developments being reviewed here. What has happened to educational attainment in this context can be seen from the recent difference among generations in school years completed:

| *Age* | *Median Years of School Completed* |
|---|---|
| 25–29 | 12.3 |
| 30–34 | 12.2 |
| 35–44 | 12.1 |
| 45–54 | 10.3 |
| 55–64 | 8.8 |
| 65 and over | 8.4 |

*Source:* U.S. Department of Commerce, Bureau of the Census.

Four full years of education—the difference between a grade-school and a high-school education—separate the youngest and oldest groups.

. . . The changes at the end of working life have been especially dramatic. In 1900, a man who survived to age 20 could expect to spend one out of fifteen of his remaining years of life in retirement. At today's rates, a man of the same age will spend about one out of seven of his remaining years of life in retirement. Retirement therefore becomes a matter of substantive import, to be planned for and saved for, to be a major part of public policy (social security) and labor-management relations (private pension plans), and to generate a wide range of demands for goods and services needed in the later years.

These developments in the life/working life relationship among men, impressive as they are, have been even more dramatic among women. That all this is of no mean importance to the female side of the work force can be shown by the following fact: *the average high-school girl today, even though she will get married and have children, will still spend 25 years of her remaining lifetime as a worker.*

The picture for women, comparable to the one already given for men, is as follows:

| | *Life Expectancy* | *Work-Life Expectancy* | *Years outside Labor Force* |
|---|---|---|---|
| 1900 | 50.7 | 6.3 | 44.4 |
| 1960 | 73.1 | 20.1 | 53.0 |

So far as life expectancy is concerned, one major fact can be stated bluntly: women outlive men, and they have been outliving them by more and more as the years have gone by. In 1900, the differential in life expectancy at birth was about 2½ years in favor of women; today, it is about 6½ years. An almost unbelievable 42½ percent of all the baby girls born today will still be alive at age 80. Barring some kind of disastrous reversal, the middle of the twenty-first century is going to see a fabulous number of old women all around the place.

With the additional 22½ years of life available to them since 1900, women have tripled the length of their working lives by adding 14 years of labor force activity on the average; and they were still able to add about 8½ years to the time spent outside the labor force for education, marriage, motherhood, and retirement.

In 1900, the average woman's working life was about one-fifth of a man's; today it is almost half that of a man's.

The pattern of working life in recent years is shown in Table 10, which presents the life and work-life expectancies for men by single years of age from 14 through 75. The male reader can look for his age in Table 10 and find what his life and work-life expectancies are. At age 20, for example, a man can expect to average 49.6 years more of life and 42.6 years more of work—and, therefore, 7 years in retirement. At age 40, as another example, 31.2 more years of life remain on the average, with another 24.1 years in the labor force. At age 65, the average male still has 12.8 years of life remaining, of which 6.3 years will be in the labor force.

The pattern described in Table 10 is of particular interest because a very important reversal occurred between 1950 and 1960 among the men. For the first time during this century, the length of working life for males declined. Life expectancy did go up a little over a year during the decade, but work-life expectancy fell by half a year because of a very substantial decline in work-force activity, particularly among

### TABLE 10 *The Length of Life and Working Life for Men—1960*

| *Age* | *Life Expectancy* | *Work-Life Expectancy* | *Age* | *Life Expectancy* | *Work-Life Expectancy* |
|---|---|---|---|---|---|
| 14 | 55.2 | 48.3 | 45 | 26.9 | 19.7 |
| 15 | 54.2 | 47.3 | 46 | 26.0 | 18.8 |
| 16 | 53.3 | 46.3 | 47 | 25.2 | 18.0 |
| 17 | 52.3 | 45.4 | 48 | 24.4 | 17.2 |
| 18 | 51.4 | 44.4 | 49 | 23.6 | 16.4 |
| 19 | 50.5 | 43.5 | 50 | 22.8 | 15.6 |
| 20 | 49.6 | 42.6 | 51 | 22.1 | 14.8 |
| 21 | 48.6 | 41.6 | 52 | 21.3 | 14.0 |
| 22 | 47.7 | 40.7 | 53 | 20.6 | 13.3 |
| 23 | 46.8 | 39.8 | 54 | 19.9 | 12.6 |
| 24 | 45.9 | 38.9 | 55 | 19.2 | 11.9 |
| 25 | 45.0 | 37.9 | 56 | 18.5 | 11.2 |
| 26 | 44.1 | 37.0 | 57 | 17.8 | 10.5 |
| 27 | 43.1 | 36.1 | 58 | 17.1 | 9.8 |
| 28 | 42.2 | 35.1 | 59 | 16.4 | 9.1 |
| 29 | 41.3 | 34.2 | 60 | 15.8 | 8.5 |
| 30 | 40.4 | 33.2 | 61 | 15.2 | 7.8 |
| 31 | 39.4 | 32.3 | 62 | 14.6 | 7.2 |
| 32 | 38.5 | 31.4 | 63 | 14.0 | 6.7 |
| 33 | 37.6 | 30.4 | 64 | 13.4 | 6.1 |
| 34 | 36.7 | 29.5 | 65 | 12.8 | 6.3 |
| 35 | 35.7 | 28.6 | 66 | 12.3 | 7.0 |
| 36 | 34.8 | 27.7 | 67 | 11.8 | 7.1 |
| 37 | 33.9 | 26.8 | 68 | 11.2 | 7.0 |
| 38 | 33.0 | 25.9 | 69 | 10.7 | 6.7 |
| 39 | 32.1 | 25.0 | 70 | 10.2 | 6.4 |
| 40 | 31.2 | 24.1 | 71 | 9.8 | 6.1 |
| 41 | 30.3 | 23.2 | 72 | 9.3 | 5.9 |
| 42 | 29.5 | 22.3 | 73 | 8.8 | 5.6 |
| 43 | 28.6 | 21.4 | 74 | 8.4 | 5.3 |
| 44 | 27.7 | 20.6 | 75 | 8.0 | 5.1 |

*Source:* *The Length of Working Life for Males,* Manpower Report No. 8, U.S. Department of Labor, Office of Manpower, Automation, and Training, July 1963.

older men, and a continuing increase in age of entry into the labor force among the young.

Between 1950 and 1960, the trend was as follows for the men:

| | *Life Expectancy* | *Work-Life Expectancy* | *Years outside Labor Force* |
|---|---|---|---|
| 1950 | 65.5 | 41.9 | 23.6 |
| 1960 | 66.6 | 41.4 | 25.2 |

These changes among the men (women continued as usual toward a markedly higher length of working life between 1950 and 1960) do not vitiate the thrust of the first half-century, of course. But they do herald a major force which has become more and more vigorous in the post–World War II period: the growing importance of a formal retirement period at the end of working life.

The decline in labor force participation in the 1950–1960 decade among older men was one of the largest and fastest on record. In those ten years, the worker rate for men 65 years of age fell from 70 percent to 56 percent—a decline of about 1½ percentage points a year.

By 1960, the 65th year of life became the truly conventional age of retirement. In 1900, 83 out of every 1,000 men 65 years old retired from the labor force; by 1960, that rate had *tripled* to 234 per 1,000.

## *Part-Time Work*

While the length of our working lives has been increasing, side by side with significant increases in time spent out of the labor force altogether, major changes have been occurring in the amount of working time put in during the year and on any given job.

Three important developments have taken place in this connection. In the first place, the amount of time put in on full-time jobs during a year has gone down significantly. Reductions in the workweek (from an average of about 60 hours a half-century ago to an average a little below 40 now in manufacturing, for example) and large increases in paid vacations, sick leave, and holidays (in some industries, we have run out of legal holidays and recent labor-management contracts call for an additional holiday which shall be the worker's birthday) have tended to reduce the total hours-of-work input during any given year.

Another development is in the form of more voluntary part-time work on the job (as contrasted with involuntary part-time work due to layoffs and lack of work). In many cases, employers have deliberately redesigned jobs to make them available on a part-time basis expressly for young people and women. Thus, the greatest increase in jobs for women in the entire post–World War II period has been in the form of part-time employment opportunities. This kind of development has, in turn, helped increase female labor force participation.

Still another development is the change in so-called part-year employment. A *part-year* worker is one who works less than 50 weeks a year; a *year-round* worker is one who puts in 50 weeks or more of work during the year. In either case—part-year or year-round—a person also may be either a *part-time* employee who works at jobs less than 35 hours a week or a *full-time* employee putting in 35 hours or more per week.

It has already been noted that the proportion of men 65 years of age and over in the labor force has declined significantly since 1950. It is noteworthy that even among men of this age group who remain in the labor force, year-round employment also has decreased significantly. In 1950, 52 percent of all men 65 years of age and over with work experience that year were year-round, full-time workers; by 1965, the proportion was down to 43 percent.

Part-year and part-time work prevail predominantly among those at the younger and older ages and among women, especially married women. For example, about one-third of the married women in the prime working ages 25–44 years work part time—triple the corresponding proportion among single women in that age group.

All these developments have added up to the spending of a larger and larger proportion of a person's working life in some kind of part-time employment. A young man starting his career at age 20 can expect to put in about 42½ years of work, according to Table 10. Recent estimates indicate that just about 10 percent of his work-life expectancy will be spent part time. At age 60, about one-fifth of the remaining years of working life will be spent in part-time employment; at age 65, the figure is closer to 30 percent in part-time jobs.

If the immediate years ahead are in line with these developments, we can expect the average man to be able to look forward to somewhat over four decades of working life, bounded at each end by increasing amounts of time for education and training and retirement and involving a gradual reduction in actual labor input during his working life on account of the uptrend in vacation and holiday time.

The indications are that he will still be able to produce even larger amounts of goods and services under the impact of advancing technology. It appears more and more likely that a man's lifetime development will *not* involve a big, separate block of time for full-time schooling, followed by a discrete change into full-time work, followed by another discrete change to full-time retirement and leisure. More and more students are working part time; more retirees do some work.

Under the impact of automation, the future lies not so much in a great avalanche of complete "leisure" time, bounded by the end of working life and life itself, as in greater opportunities for a blend of work and leisure at least at both ends of our working lives. The very increase in automation will support this; the consistent move toward the professional and other white collar jobs as well as the skilled crafts and the move toward the service industries will continue and reinforce these patterns. So does the postwar accelerated rise in educational attainment of the population and the labor force.

As a matter of fact, there has been a small, yet significant, start made down the road of alternating work and other kinds of activities even during what is traditionally known as the prime years of working life. Sabbaticals in the academic arena are of long and honorable standing. They have begun to move over into industry for both white and blue collar workers; for example, for steelworkers with long-time industry seniority. The combination of a sustained length of life and advancing productivity makes the prognosis for this development excellent—and with no diminution in the production of needed goods and services.

All of this is not to say that people necessarily prefer "leisure" to work. A good deal depends on what is available for leisure-time activities and what the alternatives are with additional income. It is significant, for example, that workers do engage in a great deal of overtime work, not necessarily because they like the idea of putting in long hours, but perhaps because in recent years *one out of every nine dollars* in a factory worker's pay check was generated by the premium pay for overtime work.

The preference for work apparently also depends on what kind of work is being done as well as financial incentive. Some evidence on these points is given by recent studies of multiple job holding, or "moonlighting," as it is often called. There is a great deal of mythology about the business of serving in more than one job. For example, the fact is that the numbers involved are relatively small. Only about 5 percent of the employed work force are multiple jobholders, and a decade of surveys shows that that figure does not vary by more than half a percentage point from year to year. It turns out, in fact, that even the term "moonlighting" is wrong, because the great majority of these people work on their second job during the day or weekends and not at night.

It is significant, however, that the rate of multiple job holding is higher for those with major financial incentives. For example, among the men, the rate for those who are married is almost double that for those who are single. And among schoolteachers it is triple the overall rate for men. It is also significant that these rates tend to be higher for those with higher levels of education and skill, which is not surprising since they tend to have the qualifications called for in the kind of industrial and occupational job market we have described as prevailing in this country today.

What the mix between time spent in and out of the labor force will be depends a good deal on what happens to the structure and levels of employment, unemployment, and income—matters to be discussed in Part Two of this volume. It is clear from the materials reviewed in this chapter, however, that we already have a solid basis for a flexible mix at all stages of our lifetimes; that there is no particular need for or virtue in the traditional three-stage, rigidly compartmentalized development from preparation for work to entry into work to formal exit from it; that the question is not just one of work versus leisure, since an enormous variety of services (voluntary or paid) is in demand, involving community needs and personal requirements.

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## PART TWO

# *The Social and Economic Setting*

*The five overriding changes which have been reviewed so far have, in turn, brought about major alterations in the actual environment in which employment prospects are being determined in this country. Here, again, there are five major social and economic forces which need to be examined in terms of their impact on careers.*

*The common denominator underlying each of the five subjects discussed in this, Part Two of the volume, is represented by the series of messages they provide concerning job futures in the United States.*

*Thus, the very rate at which various groups in the population join the work force is undergoing substantial change. What a person needs in terms of a formal education and further training to get a job in the first place, and then to hold it and advance in it, is nothing like what it used to be even a short decade ago. And the almost uniquely American way of moving—not only by people, but also by jobs—keeps changing the answer to the question of* where *the jobs are.*

*Wherever they are, jobs have some income attached* *to their performance, but here, too, not only are the variations in earnings enormous; they also are changing over time. Some—in fact, many—jobs pay so little as to put their occupants in the poverty group, and it is well to remember that the largest block of families labeled as living in poverty are* employed, not unemployed. *Yet unemployment, too, is a major problem for groups of people and places, and the concentrations of unemployment and poverty hold important lessons for all those pondering the future of a career.*

# CHAPTER VI

# *Workers and Nonworkers*

One of the most interesting and significant points about job patterns among Americans is the fact that throughout all of the twentieth century, the proportion of people of working age who actually joined the labor force remained remarkably stable. The figure has fluctuated very close to the 55 percent mark for all that time.

In the United States, persons are eligible to be counted as workers if they are 16 years of age and over (it used to be 14 and over until January 1967) and if they are *not* either in institutions (jails, asylums, hospitals) or in the armed forces. This group is known by an awesome term: the "noninstitutional civilian population 16 years of age and over." At any given time, some proportion of them will be in the *labor force* (that is, employed or unemployed) and some *not in the labor force* (for example, students, housewives, or retired). Decade after decade during this century, there has been no basic change in the proportion of the noninstitutional civilian population in the labor force.

Behind this overall stability, however, is a story of a vast change in the rates of labor force participation among the different segments of the population.

What actually happened was a significant and substantial decline in worker rates among both the young and the old, counterbalanced by an equally important shift upward among the women. But even this is a generalization masking at least seven other major changes which are briefly described below. These changes reflect some of the most important social and economic events that have occurred in this country during this century.

1. There has been a consistent and persistent decline in labor force activity on the part of men generally. At the turn of the century about 85 percent of all the males in the noninstitutional civilian population 14 years of age and over* were in the labor force. Since then there has been a decline which has brought the figure down well below the 80 percent mark.

2. The decline in labor force activity among men has been particularly marked among the nonwhites. Among white men, the decline in labor force activity since 1900 has amounted to about 10 percent; among their nonwhite counterparts, the decline was closer to 20 percent.

During the first part of the century every nonwhite male age group had a labor force participation rate of at least 90 percent, with the obvious exceptions of the teenagers and those 65 years of age and over. By 1950, the census showed only one male nonwhite age group with a worker rate of 90 percent—those 35 to 44 years old; by the time of the 1960 census there was none.

As a result of these trends, there has been a historic reversal in the positions of the white and nonwhite men. Today, the whites have the higher labor force participation; a half-century ago, it was the nonwhites who had the lead.

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* Since the change to 16 years occurred in the beginning of January of 1967, all of the past data are shown on the basis of 14 years of age and over.

3. At the same time, women have expanded immensely their ratio of workers. For example, labor force participation among white women has doubled during this century. This, in combination with the first two trends, has resulted in a considerable narrowing of the difference between the sexes in worker rates. Men, of course, still have a higher rate, but there was a time around the turn of the century when the rate for white men was 5½ times that of white women; now it is only about twice as high. Among nonwhites, the worker rates for men was about 2½ times that of women at the beginning of this century; today it is only a little over 1½ times as high.

4. Another hallmark in the labor force history of the past sixty-odd years has been the great decline in work activity among the teenagers. This has been particularly true among the boys. White teenage boys reduced their labor force participation rates from about 50 percent to less than 40 percent during this century; among the nonwhite teenage boys, the drop has been even greater: from a little over 60 percent to less than 40 percent during the same period of time.

Among the teenage nonwhite girls there was an actual halving of the labor force participation rate since 1900. Only the teenage white girls bucked this trend; their rates have been steady (approximately 25 percent of them are in the labor force), mostly because of the substantial upturn in employment opportunities for them in white collar jobs as secretaries, typists, clerks, teachers, nurses, and so on.

5. The age group 20 to 24 deserves special mention, in view of the big numbers coming up in that category in the immediate years ahead. The worker

rate has been moving down, especially among the males in this age group, in substantial part because of the trend toward more and more attendance in institutions of higher education—colleges, technical institutes, junior colleges.

6. Among the older men, the trend has been and is down. Some of the data on this group have already been presented in Chapter V. In 1900, the worker rate for white men 65 years and older was more than 60 percent; now it is less than 30 percent. Among nonwhite men in that age range, the decline has been phenomenal. Their labor force rate was about 75 percent during the first part of this century; today, it is also less than 30 percent.

7. Finally, and notably, has been the trend among married women. Around 1900, about one out of every twenty married women was in the labor force; now the rate is one in three! No other group in the population has had this kind of drastic change in worker rate. The result is a complete reversal in the composition of the female labor force in this country. In 1900, about two out of every three women workers were *single;* now they only account for about one out of every four women in the labor force. Today, most women workers (55 percent) are *married.*

Nothing reflects and summarizes the social and economic trends of a country as do changes in labor force patterns. The developments enumerated so far, for example, show what two world wars and their aftermaths have done to the role of women as workers and the attitudes toward their work. During those wars women were called upon to do all types of work, and they did them in large numbers—and they did them well. Women's suffrage; the enormous growth in female-oriented work such as clerical jobs; the shift away from the farm; technological advances in the home in the form of automatic machinery for cleaning everything from floors to dishes to clothing; the availability of frozen, packaged, and prepared foods; the decline in size of family; the very increase in life expectancy which enables them to live way beyond the time their last child is well along in school —all of these have transformed conditions affecting women's work outside the home to the point where it is now commonplace.

In being able to take advantage of these trends, women have shared with the rest of the population the tremendous increase in educational attainment. In fact, a greater proportion of girls than boys graduates from high school, and already more than 40 percent of our first degrees awarded at colleges and universities go to women. All this gives women a strong educational foundation for a return to the labor force after their children grow up.

The growing amount of time spent in educational preparation has involved another important labor force change. Compulsory school attendance laws, minimum working age laws, the very increase in educational prerequisites for employment—all have meant that young people stay in school longer, which is a good part of the explanation for the substantial decline in labor force participation rates among the teenagers.

At the other end of the age scale is the sizable decrease in worker rates among the older men, generated by a combination of forces including the rapid disappearance of self-employment opportunities on the farm, the growth of the urban industrial complex with a concomitant reduction in self-employment opportunities in the city, and the accelerated development of retirement programs under government social security (with retirement now possible at age

62) as well as under labor-management contracts (with retirement now possible as early as age 55 and even 50 in such industries as mining).

It is just about impossible to assign cause and effect to any one of these developments—advancing technology, increased life expectancy, more education and training, changing industrial and occupational structures, alteration in attitudes toward work by young people and women, the rural-urban-suburban shift, increasing incomes and level of living. All of them are milestones in American economic history of the twentieth century, and all of them have interacted to change irrevocably the profile of the labor force.

## *The Labor Force in the 1960s*

All these forces have given the composition of the United States labor force a very definite cast in terms of the contributions from the different groups in the population. For example, in 1965, *55.5 percent* of the noninstitutional civilian population 14 years of age and over were in the labor force. But the variations around that figure among the different population sectors was enormous. It was as low as *13 percent* among girls 14 and 15 years of age and as high as *98 percent* among men 35 to 44 years of age; it was as low as *10 percent* for white women 65 years of age and over and as high as *60 percent* for nonwhite women 45 to 54 years of age; it was as low as *20 percent* for married women with infants and as high as *41 percent* for single women.

Table 11 shows, as of the middle of the 1960s, what the chances of being in the labor force were for the various groups in the population.

This scorecard emphasizes that the demographic or personal characteristics of the population go a long

**TABLE 11** *Labor Force Participation Rates, by Age, Sex, Color, and Marital Status 1965*

|  | WHITE | NON-WHITE | SINGLE | MARRIED | OTHER (a) |
|---|---|---|---|---|---|
| *Men* |  |  |  |  |  |
| 14–19 years | 42.6% | 39.1% | 32.0% | 94.3% | (b) |
| 20–24 | 85.3 | 89.8 | 72.3 | 96.6 | 65.0 |
| 25–34 | 97.4 | 95.7 | 85.3 | 98.5 | 79.0 |
| 35–44 | 97.7 | 94.2 | 84.6 | 98.2 | 82.1 |
| 45–54 | 95.9 | 92.0 | 78.5 | 96.8 | 81.6 |
| 55–64 | 85.2 | 78.8 | 65.1 | 87.1 | 72.6 |
| 65 and over | 27.9 | 27.9 | 18.1 | 31.1 | 18.8 |
| *Women* |  |  |  |  |  |
| 14–19 years | 30.3 | 21.7 | 23.6 | 27.0 | 35.2 |
| 20–24 | 49.2 | 56.2 | 72.3 | 35.6 | 58.6 |
| 25–34 | 36.3 | 54.0 | 83.4 | 32.1 | 62.8 |
| 35–44 | 44.3 | 59.9 | 77.0 | 40.6 | 65.0 |
| 45–54 | 49.9 | 60.2 | 75.7 | 44.0 | 67.9 |
| 55–64 | 40.3 | 48.9 | 68.1 | 31.4 | 53.3 |
| 65 and over | 9.7 | 12.9 | 21.3 | 7.6 | 10.0 |

(a) Includes widowed, separated, divorced.
(b) Not available.

*Source:* U.S. Department of Labor. Rates by age, sex, and color are for average 1965 and by marital status for March 1965.

way toward determining the composition of the labor force. At least five points stand out.

1. In the first place, age for age, men still have a higher labor force participation rate than women, although the latter have been coming up fast, as we recounted in the last section. Overall, the men's rate is about double that of women.

2. The second significant factor is the matter of age. The labor force pattern that has developed over the years in this country among the men has resulted in a progression by age which takes the form of a

large inverted U: starting with a worker rate of around 40 percent among the teenage boys, the rate moves up sharply by more than doubling to over 85 percent among men 20 to 24 years, then lifts up to over 95 percent for adult males, begins to drift down back to somewhat over 80 percent among men in their late fifties and early sixties, and then falls steeply among those 65 years of age and over.

Marriage and childbearing produce quite a different age pattern of worker participation among the women, particularly the white women, which is more in the form of two inverted U's and typifies the two work careers more and more women are experiencing. The labor force rate moves up steeply among teenage girls, but then declines when they reach their twenties and early thirties as they marry and have children. The rate picks up again as they move into their late thirties and early forties, when the children grow up and go to school, and then declines for women in their later years. Recently, the peak worker rates among women, standing at about 50 percent, are reached first when they are 18 and 19 years old and in their early twenties and are working after completing their education, and again when they are between 45 and 50 years of age, having returned to the point of the family cycle when labor force activity is again possible.

3. Cutting across these various patterns as we build the mosaic of work activity in this country is the third factor of color. Generally speaking, the progression by age and sex described so far holds for both the white and nonwhite sectors of the population. Among the men, however, a significant color difference does exist, particularly among the adults 45 to 64 years of age, when the rates for nonwhite males are particularly lower than those which prevail among

the whites. Not enough evidence is available to document an explanation of why this is so, but the expert opinion in the field considers this phenomenon a result of the lack of employment opportunities, adequate education, and training as well as discriminatory practices which have led to so many rebuffs for this group that a significant number withdraw from the labor force altogether. What seems to be critically important is that this kind of labor force disappearance shows up mostly among nonwhite adult males with minimal educational attainment. The chances are that the white/nonwhite differential would lessen and even disappear, assuming continued high levels of economic activity, if we could achieve the double goal of increasing education among the younger generation of nonwhites and the diminution of discriminatory practices in employment.

Interestingly enough, the reverse situation holds among the adult women, where in an age group such as 45–54 years, the nonwhite rate is over 50 percent higher than that of the white. Employment opportunities for nonwhite women are much more prevalent, especially in various service jobs, and the income needs for nonwhite family groups are also very substantial. As a result, a very high worker rate of 60 percent or more prevails for the adult nonwhite woman from the time she is in her middle thirties to her middle fifties.

4. Marital status, as a fourth factor, also makes a big difference in worker rates. There is always an animated discussion over the fact that, age for age, married men have a higher labor force participation rate than single men. This is so whether they are in their seventies or in their teens, and the usual reason found is that married men simply have to move into the job market in greater proportions because of their

heavier responsibilities. It may also be that disability is a factor which can inhibit both marriage and employment; this would account for a lower worker rate among those who are single.

Where marital status really makes a big difference, of course, is among the women. For most of the age range, single women and single men have about the same labor force rates. Between about ages 20 and 64, their rates are around 70 percent and 80 percent, which is about two and three times more than the corresponding rates among the married women.

Married or not, the woman worker has become a major force on the American job market. For example, one out of every two persons added to the payrolls of nonfarm business and industry between July 1965 and June 1966 was a woman. Some idea of the role they play among the various industry divisions is shown by the information in Table 12.

TABLE 12 *Women Employees on Payrolls of Nonagricultural Establishments October 1966*

| *Industry Division* | *Number (000)* | *% of Employees in Each Industry Division* |
|---|---|---|
| *Total* | *22,854* | *35%* |
| Mining | 34 | 5 |
| Contract construction | 154 | 4 |
| Manufacturing | 5,437 | 28 |
| Transportation and public utilities | 800 | 19 |
| Trade | 5,185 | 39 |
| Finance, insurance, real estate | 1,563 | 50 |
| Services | 5,072 | 52 |
| Government | 4,609 | 41 |

*Source:* U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings and Monthly Report on the Labor Force*, February 1967 (Vol. 13, No. 8), p. 85.

Women account for 50 percent of the work force in two of the industry divisions, with over one-third in another, and they even comprise one-fourth of the manufacturing (factory) wage and salary workers.

5. What determines a married woman's worker rate, however, is the fifth factor of dependency, that is, whether or not she has children, and even more importantly the age of her children, if she has any. A married woman of, say, under 35 years of age has a labor force participation rate of about *60 percent* if she has no children under 18, about *40 percent* if she has children who are *all* of school age (between 6 and 17 years old), about *20 percent* if her children are infants (less than 3 years old).

The interlacing effect of the historic, social, and economic forces we briefly noted in describing the changes in worker rates since the turn of this century and the demographic profile of the population all combine to give us the labor force standings shown in Table 11. For more and more sectors of the population, however, the interacting effects of two other forces are playing a larger role in determining the prospects for their labor force employment status—education and training in the setting of advancing technology—and it is to these that we now turn in the following chapter.

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# CHAPTER VII

# *Automation and Education*

Automation is a force which goes by many names. Some refer to it as cybernation and emphasize the vast potentialities for manpower displacement inherent in its impact; others play it in lower key by referring to it as increasing output per manhour, making us a much more productive, efficient, and competitive society and providing the point of vantage for increasing income and levels of living. Some view automation as accelerating in increasing crescendo to a point where major sectors of the economy soon will be producing without the benefit of human intervention; others call attention to the official government statistics which do not, for the overall economy at least, show any marked increase in the rate of productivity increase over the years.

Fortunately it is not ncessary to resolve all these great questions for our purposes here. For example, there is little quarrel with the proposition that automation and technological change can cause reductions in the number of people needed to produce particular goods and services and that this is exactly what has happened in many specific economic sectors in the country. When this occurs in combination with declining demand for the good or service being produced, the results can be very substantial amounts of labor displacements. When it occurs in the face of increasing demand for what is being sold, there may be no manpower displacement at all, although the results may be seen in what has come to be called "silent firing"; that is, no additional hirings of people even when demand goes up because advancing technology permits an upturn in production without additional labor. However, demand for some good or service can be so pressing that additional workers have to be added even with improving technology.

Even when displacement does take place, it does not necessarily mean that unemployment will result; a substantial rate of economic growth with accompanying increases in employment opportunities can absorb the displacement which occurs.

There is, of course, another force of surpassing importance. Technological advance itself results in a variety of new industries and jobs. The television industry, which was virtually nonexistent at the end of World War II, and the electronic data-processing industry of almost entirely recent vintage now employ tens of thousands of persons and are responsible for additional major employment sectors outside their own establishments.

The impact of technology on employment is plain to see from many concrete cases. *Agriculture* is perhaps the outstanding example. Improved farm machinery, new fertilizers and insecticides, new crops and strains of livestock have caused farm output per manhour to go up at a rate almost 2½ times that of the nonfarm sector of the American economy since the end of World War II. The effect on employment has already been documented.

In the *railroad* industry, where major new technological developments have been added in all departments in the face of declining railroad traffic, there was a drop of 31 percent in employment between 1957 and 1963 alone.

In the *automobile* industry, a pioneer in the introduction of automatic machinery, an interesting and significant development occurred in 1963. That was the year when more than 7 million cars were produced, the same number, as it happened, as had been turned out in 1955. However, the 1963 auto production was made with 17 percent fewer workers than had been required in 1955.

One example of a different kind of trend is *banking*, where electronic data processing has taken hold and is proceeding rapidly. The volume of banking business has grown so much at the same time, however, that bank employment has continued to rise substantially.

All in all productivity in the United States has been increasing in recent years at a rate where about 2 million jobs a year are affected by some technological change. All people holding those jobs have to make some kind of adjustment by finding a new job, engaging in retraining, and so on. This is by no means an inconsiderable amount of jobs affected, and it is estimated that fully one-half of the total increase in GNP in 1964, for example, went to providing employment for those affected by this phenomenon. This underscores, incidentally, the importance of economic policy in its dedication to sustaining a level and rate of growth in the demand for goods and services (GNP) sufficient to provide full employment.

Since 1947, output per manhour in the private economy in this country has gone up by about 3 percent a year. Although this may seem to be a relatively small rise, an annual increase of that magnitude takes the shape of a compound interest curve. In a period of 25 years, an increase of 3 percent per year results in a 100 percent change, and that is exactly what is happening in the United States. Somewhere around 1970, about a quarter of a century after the end of World War II, we will have *doubled* our output per manhour.

Under these circumstances it is not surprising to find many indications that automation and technological change are going to play an important role in determining job prospects for Americans in the immediate years ahead. In addition to developments in agriculture, there are ten far-reaching innovations now reshaping or about to reshape the world of work, especially in the kinds of work being done and the kinds of workers needed to do the job.

1. The first, and probably the one with the greatest potential social and economic significance, is the *electronic computer*. ENIAC, the first computer of this sort, was set up in 1943 to help in the war effort, and the first civilian computer was not put into use until 1951 in the form of UNIVAC. But by 1965, about 200,000 general-purpose digital computers were at work and more than another 10,000 were on order. They are being applied to hundreds of different uses, in all shapes and sizes, in all types of businesses.

2. *Instrumentation and automatic controls* represent another rapidly developing area of technology. The nub of the matter here is the application of computers to the control of various processes in such industries as chemicals and electric power, where the very operation of instruments yields data which are fed back to the computer to guide the control instruments.

3. The *numerical control* of machine tools was first introduced into commercial practice in 1957, and by 1965 there were about 5,000 numerically controlled machine tools installed. This hitching of computers to

machine tools is expected to move much more rapidly in the years ahead and to increase the sections of the metalworking economy which can be automated.

4. *Communication technology* has advanced with great rapidity in recent years, noticeably in data transmission by telephone lines and other channels, in the form of automatic telephone operations, and in the communications satellites of recent note.

5. At the same time, *machinery* itself is being transformed; for example, in the design of one large integrated machine which takes the place of a number of separate steps. Many automatic transfer lines are becoming characteristic of more and more industrial operations. Machinery is also being designed to take the place of hand operations; for instance, for harvesting fruit and vegetable crops.

6. Fork-lift trucks, hoists, cranes, tractors, conveyors are examples of the *mechanization of materials handling*, previously the domain of much unskilled labor. Warehousing operations are also being automated through the combination of electronic devices and unmanned trucks and conveyors.

7. The modern industrial complex is based in part on *metal processing*, working with such materials as iron, steel, aluminum. The basic oxygen process of steelmaking, for example, plus continuous casting and a variety of other advances, represents very substantial automation of the entire iron and steelmaking process.

8. The introduction of the automated ship, automated railroad traffic and freight control, hydrofoils and hovercraft, and long-range supersonic aircraft exemplifies the revolutionary changes occurring in the field of *transportation*.

9. In the area of *power production*, automatic control systems and the birth of nuclear generators

are both examples of recent advancing technology.

10. Finally, there is a whole stream of new *products and materials,* especially in the electronics field. Estimates indicate that in manufacturing as a whole, one-fourth of all sales in 1965 was accounted for by products not produced ten years earlier; it was about one-half in the electrical machinery industry during the same period of time.

This brief listing illustrates the range of new developments throughout the industrial and business spectrum, involving the production of both goods and services. The outlook is for further extension of these forms, especially under the stimulus of the increase in research and development work, which has more than tripled in the past dozen years. Significantly, too, the evidence seems to indicate that the time span between an invention and its actual application is shortening. According to the Bell Telephone Laboratories, the following examples show this trend:

| *Invention* | *Year of Discovery* | *Year of Application* |
|---|---|---|
| Electric motor | 1821 | 1886 |
| Vacuum tube | 1882 | 1915 |
| Radio broadcasting | 1887 | 1922 |
| X-ray tubes | 1895 | 1913 |
| Nuclear reactor | 1932 | 1942 |
| Radar | 1935 | 1940 |
| Atomic bomb | 1938 | 1945 |
| Transistor | 1948 | 1951 |
| Solar battery | 1953 | 1955 |
| Stereospecific rubbers and plastics | 1955 | 1958 |

*Source:* William O. Baker, "The Dynamism of Science and Technology," in E. Ginzberg (ed.), *Technology and Social Change* (New York: Columbia University Press, 1964).

Another study for the National Commission on Technology, Automation, and Economic Progress (see the reference at the end of this chapter) showed that the time between the discovery of a new technology and the recognition of its commercial use fell from 30 years in the early part of this century to only 9 years in the post–World War II period. It also indicated that the actual diffusion of the end product of the new technology took place at a rate four times as fast in the last 20-odd years than in the first 20 years of this century.

The influence of advancing technology also can be clearly seen in the changing knowledge and skill requirements of many occupations. For example, the maintenance electrician now has to learn basic electronics to be able to diagnose and repair complex equipment; the tool and diemaker is finding it more and more necessary to have a working knowledge of mathematics, basic science, and electronics; the appliance serviceman needs to know the principles and practices of electricity and electronics. More and more the world of work and the world of education become interrelated under the drive of technological change.

## *The Education of the American Labor Force*

The point about education in this frame of reference can be simply put: as technology advances, it takes more and more learning and training to get a job in the first place, to keep a job, and to move about in career development in a significant proportion of career fields.

This does not mean that automation and technological change do not often result in a diminution of skill needs in operations to which they are applied. This, indeed, does happen, as when a new machine is devised which requires a less skilled person to tend it than the worker who originally performed the job.

It may be said parenthetically, however, that just as often this kind of situation has raised the requirements elsewhere for professional and technical personnel in the sector which researched, designed, and produced the machine, as well as in the place which is using it and is responsible for its care and repair.

There are two major signposts in these situations. The first is that more and more jobs are becoming more and more technical, and the educational and training prerequisites for employment in *them* are getting higher and higher. The second is the fact that advancing technology changes jobs and their content, does away with some entirely, and produces brand new ones. All of this makes it necessary to keep up to date if one is to remain responsive to these changes and be able to make a switch when the occasion demands it. This also calls for the broadest kind of education and training.

It is hardly coincidental, therefore, that for some years now the records show that one out of every three unemployed persons never went beyond grade school; that two out of three of the jobless do not have a high-school diploma; that the current unemployment rate for dropouts is about 15 percent, as more and more employers demand evidence of a high-school diploma before even interviewing a boy or girl for a job.

Table 13 shows the link between educational attainment and occupation. By 1965, the average worker in the United States already *had more than a high-school education* (12.2 years); for professional personnel the average was just short of a master's degree. In every white collar occupational group where job prospects are on the upturn, the average educational attainment was more than a high-school education. Those with relatively low educational attainment

**TABLE 13** *Educational Attainment of Workers 18 Years of Age and Over in March 1965*

| | *Median Years of Education* |
|---|---|
| *All workers* | *12.2* |
| Professional and technical | 16.3 |
| Managers, officials, proprietors | 12.6 |
| Clerical | 12.5 |
| Sales | 12.5 |
| Skilled | 11.7 |
| Service workers (except household workers) | 11.3 |
| Semiskilled | 10.6 |
| Unskilled | 9.5 |
| Household workers | 8.9 |
| Farmers and farm managers | 8.8 |
| Farm laborers | 8.4 |

*Source:* U.S. Department of Labor, Bureau of Labor Statistics, *Educational Attainment of Workers, March 1965*. Special Labor Force Report No. 65, 1966.

were mostly in those job fields where employment prospects are not as bright.

The lesson of all this has not gone unheeded by people in general, workers in particular. There has been a consistent, persistent, and significant increase in school enrollment in this country. For example, the proportion of youngsters 14 and 15 years of age enrolled in school has gone up from 92 percent to 99 percent since 1947; the corresponding proportion among 18- and 19-year-olds has moved up from one-fourth to over two-fifths—a dramatic rise for this critical age group; and in the college-age group of 20 to 24, the proportion enrolled in school has doubled from about 10 percent in 1947 to 20 percent in the mid-1960s.

As a result of these trends, the educational background of workers in general has increased substantially. For example, the average years of school completed by all workers 18 to 64 years of age in 1940 was *9.1;* as Table 13 shows, it was *12.2* in 1965. The significance of this kind of change transcends the sheer arithmetic which indicates a gain of three years (about 33 percent) in average years of school completed, which is in itself quite a showing for this span of time. What also happened was a change which moved the average educational attainment of the adult labor force from a little over a grade-school education to a high-school diploma. In the current technological age, the two are not even in the same league.

There is nothing in the offing which is going to alter this trend. In fact, government projections indicate a substantial movement upward in the educational background of the nation's labor force in the years ahead. For example, it is expected that by 1975, one-fifth of all workers between 25 and 34 years of age will have four years or more of college, and almost 75 percent of them will be high-school graduates.

Anyone who does not measure up educationally is going to be at an increasing disadvantage in the competition for employment under this double-barreled challenge: the *qualitative* dimension represented by the increasing complexity of jobs under the impulsion of advancing technology and the *quantitative* dimension of the increasing numbers and proportions of workers who do have the requisite educational background. Thus, the 7½ million boys and girls who will be coming out into the job markets during the 1960s without a high-school diploma are heading into exactly this kind of competitive arena.

As the years go by and younger people generally get more and more education, the chances are that the spread in educational attainment between various age groups is going to increase. For those who look into the future, Table 14 shows what the educational picture is expected to look like in 1975. It will go a long way toward determining the job outlook for everyone in each of the categories at that time.

TABLE 14 *Expected Educational Attainment of the American Work Force 25 Years of Age and Over 1975*

(PERCENT DISTRIBUTION)

| *Educational Attainment* | *All Workers 25 and Over* | *25–34* | *35–44* | *45–54* | *55–64* | *65 and over* |
|---|---|---|---|---|---|---|
| *Total* | *100%* | *100%* | *100%* | *100%* | *100%* | *100%* |
| 8 years or less | 18 | 9 | 14 | 20 | 29 | 43 |
| 1–3 years of high school | 20 | 18 | 21 | 22 | 22 | 20 |
| Less than 12 years of school | 38 | 27 | 35 | 42 | 51 | 63 |
| High-school diploma | 36 | 42 | 38 | 34 | 29 | 17 |
| Some college | 26 | 31 | 27 | 24 | 20 | 20 |

*Source:* U.S. Bureau of Labor Statistics.

Here again there are two dimensions of potential competition for jobs on the basis of educational attainment. Given the expectations for occupational change already discussed, with their heavy emphasis on higher levels of preparation, *within* any age group the problems for those with minimal levels of education are going to be quite formidable. For example, in the age group 25 to 34, in 1975, about 10 percent will have a grade-school education or less and another 18 percent will not have stayed to graduate from high school. They will have a much more difficult time on the basis of the present outlook than the majority of people of their own age who will be high-school graduates or better.

At the same time, there is going to be a very significant difference *among* age groups. For example, the proportion of workers with a grade-school education or less among those 55 to 64 years of age in 1975 is expected to be more than triple the corresponding rates among those 25 to 34. Either way—and in any age group—the problems faced by those with minimal education are going to be especially serious, underscoring again the impact of our advancing technology on education and training at all stages of a person's career.

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# CHAPTER VIII

## *Migration and Mobility*

By foot and by horse during the beginnings of our history, by auto and jet transport in more recent years, Americans have traversed, crisscrossed, and built up a continent. People move for all sorts of reasons—to take advantage of the drier climate in Arizona, for a better job in California, to be closer to relatives in Illinois. The overwhelming majority of movers, however, make the change because of some *economic* reason: to get a job in the first place or to take another job with better pay or working conditions or both.

Since 1947, records have been kept on how many people do move in the United States each year. The information shows that, year after year, about 20 percent of all people 1 year of age and over *move* (make some change of address) annually, and about 6½ percent *migrate* (make a move which carries them across county or state lines). At present population levels, this has meant that about 40 million people 1 year of age and over move during a year's time and that about 12 million of them migrate.

These are substantial numbers of people, and the year-after-year migration obviously has brought some striking changes in the population distribution in the United States, marked particularly by major shifts from the South to the North and from all regions of the country to the Far West and by explosive increases in the population of some states, concurrent with actual population declines in others.

For example, between the two census years of 1950 and 1960, this was the situation for California and Florida:

| | *Net Change in Population 1950 to 1960* | *Births* | *Deaths* | *Net Migration* |
|---|---|---|---|---|
| California | + 5,131,000 | 3,142,000 | 1,156,000 | 3,145,000 |
| Florida | + 2,181,000 | 915,000 | 351,000 | 1,617,000 |

Over any period of time, a state's population change will depend on the excess of its births over deaths and the net migration into or out of its borders. In California's case, net migration of over 3 million matched the total number of births and accounted for about three-fifths of that state's population increase during the decade of the 1950s. In Florida's case, net migration was actually about 75 percent higher than all the births during the ten-year period and accounted for more than half of the state's population increase.

In contrast, this was the situation in West Virginia and Arkansas:

| | *Net Change in Population 1950 to 1960* | *Births* | *Deaths* | *Net Migration* |
|---|---|---|---|---|
| West Virginia | – 145,000 | 474,000 | 172,000 | – 447,000 |
| Arkansas | – 124,000 | 470,000 | 161,000 | – 433,000 |

In both of these states there has been a considerable excess of births over deaths during the 1950s. However, out-migration was so heavy during that decade that both joined the ranks of states which actually ended up with fewer people in 1960 than in 1950.

Migration also was responsible (and still is) for the remarkable growth of suburban centers and the corresponding declines among the central cities which have prevailed in the metropolitan areas of the United States.

For example, between 1950 and 1960 there were 29 counties which had net in-migration of 100,000 or more. More than half of them (16) were the suburban counties of the largest metropolitan areas in the country. Twelve of them were located in California and Florida alone.

At the other end of the scale, there were 9 counties or equivalent which lost at least 100,000 net migrants between 1950 and 1960. Every one of them was a central district of a very large metropolitan area: Brooklyn, Manhattan, Philadelphia, Detroit, St. Louis, Boston, District of Columbia, Bronx, and Baltimore.

All these forces continue to operate during the current decade, and we are in the process of witnessing striking differences in regional and state population and manpower growth.

For example, between 1960 and 1970 there will occur a 22 percent increase in the size of the work force of the United States. But the Far West's labor force will go up by 36 percent, and that of the Northeast by only 16 percent.

A good part of these differences can be traced to the variations in growth among young workers. All regions are going to have big increases in the number of newcomers to their working population between 1960 and 1970, but the range goes from almost a doubling (94 percent) in the Far West to about half of that (56 percent) in the Northeast.

TABLE 15 *Percent Increase in Labor Force, 1960–1970, by State*

| *State* | *Percent Increase* | *State* | *Percent Increase* |
|---|---|---|---|
| *United States* | 22% | Washington | 22 |
| Nevada | 72 | Montana | 21 |
| Arizona | 57 | Oregon | 21 |
| Utah | 54 | Vermont | 21 |
| Florida | 42 | Ohio | 20 |
| California | 39 | Indiana | 20 |
| Colorado | 37 | Oklahoma | 19 |
| New Mexico | 32 | Wisconsin | 19 |
| Maryland | 29 | South Dakota | 19 |
| Idaho | 27 | Minnesota | 18 |
| Georgia | 27 | Michigan | 18 |
| Arkansas | 26 | Kentucky | 18 |
| Delaware | 26 | Nebraska | 17 |
| Mississippi | 26 | North Dakota | 17 |
| Louisiana | 26 | New York | 16 |
| Virginia | 26 | Kansas | 16 |
| Texas | 25 | Massachusetts | 14 |
| Hawaii | 24 | Alaska | 14 |
| South Carolina | 24 | Illinois | 14 |
| Tennessee | 23 | West Virginia | 14 |
| Connecticut | 22 | Iowa | 13 |
| Alabama | 22 | Maine | 12 |
| Wyoming | 22 | Pennsylvania | 11 |
| New Hampshire | 22 | Rhode Island | 10 |
| North Carolina | 22 | Missouri | 10 |
| New Jersey | 22 | District of Columbia | 9 |

*Source:* U.S. Department of Labor, Bureau of Labor Statistics, *Monthly Labor Review*, October 1966, p. 1100.

Table 15 shows the projections of labor force by state for the 1960–1970 period, and residents from each can find what the outlook is for them. Here it is sufficient to note that the range again is enormous. Among the first ten, seven experienced employment gains of at least double the national average since the end of World War II.

Migration varies a great deal among different groups in the population, and a number of these variations are significant from the point of view of career development. For example, there is a marked differential in migration rates by age. Typically, migration rates are high among children under 5 years of age who move with their relatively young parents; the rates go down for youth in elementary and secondary school whose parents are now older and more settled and who, in fact, often may decide against moving and changing their children's schools; migration rates pick up considerably after high-school graduation and reach a peak among those in their early twenties, at which point marrying, setting up house, joining the work force, and changing jobs—characteristic of the early phases of working life—are all taking place; migration rates then fall quite sharply and decline to very low levels after about age 45.

Thus, migration in the United States is a major phenomenon at the point in people's lives when primary changes involving work and the family cycle are involved.

However, it is significant that migration rates are higher for those with above-average education. For example, in recent years about one-fourth of the male migrants aged 25–29 years have been college graduates; less than 10 percent of the nonmigrants have a college degree. Geographic migration falls off sharply with decreasing education, if only because job opportunities elsewhere are much less abundant at the lower-skill, lower-educational attainment level than they are at the higher rungs of the skill-education ladder.

As recently as 1965, the migration rate for college men 25 years of age and over was 8.8 percent, more than double the corresponding rate (4.0 percent) for those with no more than a grade-school education.

The same forces show up clearly in the occupational differentials in migration, shown in Table 16 for males 25–29 years of age (when migration rates are at a peak) for the 1955–1960 period. Among professionally employed workers the migration rate was more than 50 percent, almost 2½ times the corresponding rate for unskilled laborers.

**TABLE 16** *Migration Rates, 1955–1960, Employed Males 25–29 Years of Age, by Occupation*

| | |
|---|---|
| *Total* | *30.3%* |
| Professional, technical | 51.3 |
| Managers, officials | 38.2 |
| Sales | 35.6 |
| Clerical | 28.9 |
| Skilled | 27.8 |
| Service (except household) | 25.4 |
| Farm laborers | 22.4 |
| Laborers (except farm) | 22.5 |
| Farmers, farm managers | 17.6 |

*Source: Manpower Report of the President, 1965,* p. 271.

Migration rates, contrary to popular belief, are higher for whites than nonwhites for the same reasons. The Negro tends to be unskilled, less educated, less informed, and all in all has a more difficult time moving in response to economic opportunity.

In general, the unemployed who do move make out better in the job market than those who do not. For example, among men in the prime working ages of 25–44 years who were out of work in March 1962, about 80 percent who migrated had jobs by March 1963; 60 percent who did not migrate had jobs a year later.

The same picture seems to prevail among the younger people. Among out-of-school youth 16 to 21 years of age in February 1963 who were high-school graduates, the unemployment rate was only half as high among those who moved as among those who did not move since their last years of school. Among dropouts of the same age, the unemployment rate was 31 percent of those who did not move and 23 percent for those who did move.

This kind of evidence underscores the pattern in the direction of migration in the United States which has been characterized by movement to areas of higher economic opportunity. It is significant that the greatest migration losses have occurred in the rural areas where job opportunities have been minimal. Every group of counties which had more than half of its population in rural areas lost population between 1950 and 1960.

People also move from areas of low income to areas of higher income. In fact, the only group of counties which gained population between 1950 and 1960 was the one where families averaged incomes of $6,000 or more; all other counties lost population, with the losses heaviest for counties with lower family income. In fact, counties where family incomes were lower than $3,000 (the poverty line) lost half of their young adults during the 1950s.

However, it should not be assumed that all migrants are so well informed that they all make the right moves in the right directions. The *Manpower Report of the President* for 1965 presented data showing a good deal of uninformed migration, with considerable numbers of migrants going to depressed instead of to prosperous areas and experiencing a substantial amount of unemployment as a consequence. Between 1955 and 1960, the unemployment rate among men who migrated into areas of high unemployment was double that of men who had moved into areas of low unemployment. Among nonwhites, the unemployment rate among those migrating into areas of high unemployment (22 percent) was 2½ times the corresponding rate among those moving into areas of low unemployment.

It becomes a matter of some import, therefore, to make migration a much better informed process if it is to serve as an effective mechanism for bringing workers face to face with job opportunities. In this connection, it also becomes a matter of primary concern to know the score about the changing geography of employment opportunities themselves. Jobs also move around, and some idea of how extensive this has been can be seen from Table 17, which shows what has happened among the various states since 1939.

Between 1939 and 1965, wage and salary workers on payrolls of business, industry, and government went up by almost 100 percent. The variation among the states, however, was immense, ranging from less than one-third of the national average in West Virginia and Rhode Island to increases of at least double the national average in California and New Mexico and three times the national average in Arizona, Florida, and Nevada. By 1965, one out of every six jobs in the United States was located in just the three states of California, Texas, and Florida.

In addition, unlike most of the northern states, where job growth during this period has generally been below the national average, most southern states scored employment gains above that of the country average. This is concrete evidence of the recent be-

**TABLE 17** *Employees on Nonagricultural Payrolls, by State 1939–1965*

| STATE | PERCENT OF ALL EMPLOYEES IN EACH STATE | | PERCENT CHANGE FROM 1939 TO 1965 |
|---|---|---|---|
| | 1939 | 1965 | |
| Alabama | 1.3% | 1.4% | 118.1% |
| Arizona | .3 | .7 | 320.3 |
| Arkansas | .6 | .8 | 129.3 |
| California | 6.0 | 9.5 | 218.7 |
| Colorado | .7 | .9 | 153.3 |
| Connecticut | 1.8 | 1.7 | 84.7 |
| Delaware | .2 | .3 | 139.6 |
| District of Columbia | 1.1 | 1.0 | 85.3 |
| Florida | 1.3 | 2.7 | 316.2 |
| Georgia | 1.7 | 2.1 | 137.4 |
| Nebraska | .7% | .7% | 87.0% |
| Nevada | .1 | .3 | 346.8 |
| New Hampshire | .5 | .4 | 48.5 |
| New Jersey | 4.1 | 3.7 | 80.7 |
| New Mexico | .3 | .4 | 229.4 |
| New York | 13.6 | 10.8 | 57.5 |
| North Carolina | 2.1 | 2.3 | 127.3 |
| North Dakota | .2 | .2 | 102.2 |
| Ohio | 5.8 | 5.5 | 88.1 |
| Oklahoma | 1.1 | 1.0 | 98.8 |
| Oregon | .8 | 1.0 | 134.6 |

| | | | |
|---|---|---|---|
| Idaho | .3 | .3 | 106.9 |
| Illinois | 7.5 | 6.4 | 67.8 |
| Indiana | 2.7 | 2.7 | 98.8 |
| Iowa | 1.4 | 1.2 | 74.0 |
| Kansas | 1.0 | 1.0 | 102.7 |
| Kentucky | 1.3 | 1.3 | 98.2 |
| Louisiana | 1.2 | 1.5 | 119.5 |
| Maine | .7 | .5 | 37.8 |
| Maryland | 1.6 | 1.8 | 115.4 |
| Massachusetts | 4.5 | 3.3 | 48.3 |
| Michigan | 4.4 | 4.4 | 98.3 |
| Minnesota | 1.8 | 1.8 | 97.4 |
| Mississippi | .7 | .8 | 136.8 |
| Missouri | 2.7 | 2.5 | 75.4 |
| Montana | .3 | .3 | 64.5 |
| Pennsylvania | 8.9 | 6.5 | 45.2 |
| Rhode Island | .8 | .5 | 29.4 |
| South Carolina | 1.0 | 1.1 | 120.5 |
| South Dakota | .3 | .2 | 76.9 |
| Tennessee | 1.5 | 1.8 | 133.1 |
| Texas | 3.6 | 4.8 | 170.8 |
| Utah | .4 | .5 | 172.3 |
| Vermont | .2 | .2 | 59.4 |
| Virginia | 1.8 | 2.0 | 124.5 |
| Washington | 1.4 | 1.5 | 106.7 |
| West Virginia | 1.2 | .8 | 26.7 |
| Wisconsin | 2.2 | 2.2 | 99.3 |
| Wyoming | .2 | .2 | 78.3 |
| U.S.A. | 100.0 | 100.0 | 97.4 |

*Source:* U.S. Department of Labor, Bureau of Labor Statistics, Bulletin 1370–3, *Employment and Earnings for States and Areas 1939–1965* (Washington, D.C.: Government Printing Office, June 1966). Details will not add because of rounding.

ginnings of new industrialization in the South and could herald important changes in migration patterns if continued into the future.

The changing geography of American industry portrayed in Table 17 reflects many of the trends which have been reviewed in previous chapters. For example, West Virginia's very small employment gain is related to declines in one of the major goods-producing industries—mining; the below-national-average performance in some of the New England and East North Central states is related to corresponding performances in some of the goods-producing manufacturing industries such as textiles and of the metalworking industries.

On the other hand, the states with the biggest employment increases also have scored substantial gains in the service sectors; for example, recreational and leisure-time activities in California and Florida. Also highly correlated with overall job growth has been the expansion in government services. Every one of the states with employment growth double or more the national average has had close to 100 percent or higher increases in state and local government jobs.

The shifting pattern of employment in the United States also illustrates the manner in which technological change has been an effective agent in bringing about many of these alterations. Major changes in the technology of fuel, power, and transportation have enhanced the mobility of industry itself, releasing it from rigid locational factors, and the prognosis is that the geography of employment will continue to show major shifts as it becomes more responsive to the availability of manpower with the requisite skills rather than to the physical factors of industrial location.

## *Job Changing*

Migration and mobility, therefore, turn out to be much more than shifting from place to place. Also involved is job changing, which may or may not involve a geographic shift. The evidence shows that hundreds of thousands of persons move into and out of the labor force *each month;* similar numbers shift from employment into unemployment status and vice versa; the various seasons of the year also bring major changes in the work status of very substantial numbers of people as they respond to the ebb and flow of labor demand in such activities as farming, construction, food processing, Easter and Christmas trade, and the like.

In looking ahead toward the future course of an individual's working life, it is important to recognize the fact that at current rates a young man beginning his work career at age 20 can expect to make between six and seven job changes during his remaining years in the labor force.

The time is long past when an individual could prepare for some one job and then remain in it for the rest of his working lifetime. The various changes enumerated so far in this volume—particularly those in occupational and industrial structure, as well as technological innovations—make a one-job career a practical impossibility.

This does not mean, of course, that a career is composed of constant turnover from one job to another; the picture often drawn of the American worker which makes him out as a nomad in a world of work is highly exaggerated. There is a substantial core of stability and job tenure in the American work force. For example, a survey made in January 1966 showed that three out of every ten workers had been continuously with the same job or business for more than ten years.

The average time spent on the same job or business was about 4½ years, according to the survey. There were major differences among various groups in the population, however, connected mainly with the process of career development.

One of the most important differentials in the rate of job changing is based on age. Job changing becomes an important phenomenon at ages 18 and 19, when most young persons make their first full-time entry into the labor force. Boys in this age group give as a reason for job shifting either the loss of their job or voluntary resignation to look for something better. In these years, young men go in for a good deal of job changing because of their inexperience, their lack of seniority, their need for more exploration before settling into a permanent career.

Actually, job changing reaches a peak among men 20 to 24 years old, again mostly because of job reasons; after this age group, the job changing rate falls as men marry, have families, and stabilize their employment. At the later years, job changes occur mostly because of a loss of employment.

As might also be expected, job changing is more frequent among blue collar than white collar workers. Unskilled laborers, for example, have a job changing rate about double that of professional personnel. Skilled craftsmen, as a group, also show a relatively high job shifting rate because many are engaged in such industries as construction where men move from project to project very frequently and where highly seasonal operations militate against job stability.

Thus, there are many factors which tend to spur mobility and migration, especially the economic forces involving employment. Yet, there are many situations which can act as obstacles to movement. These include home ownership, hesitancy to change children's schools, and the desire and need to remain in a locality in which friends and family also reside.

A variety of recent labor-management practices also have been cited as impediments to mobility, including seniority systems and private pension plans. As a person grows older in his job and develops more and more seniority, he is apt to remain where he is after being laid off, in the hope that he will be called back and retain his seniority status in his place.

Private pension plans now cover about half of all wage and salary workers in private, nonfarm firms. They are a relatively recent, post–World War II phenomenon which has been accelerating in its application. Supplementing, as they do, the workers' regular annuities under Social Security, they can become an important item in the maintenance of income for the older person. However, to the extent that a worker has to stay with an employer until retirement in order to get his private pension, there is an inhibiting factor against job changing and migration.

To counteract the restraining influences of the pension plans, "vesting"—a guarantee to the employee of a right to his accrued benefits when he reaches retirement age even if he leaves his employer before this time—and "portability"—the ability to carry with him and continue his pension plan with a different employer who participates in the plan—have been devised. Vesting rights now are found in about two-thirds of the plans covering three-fifths of the workers; they still contain restrictions, such as service of a minimum number of years, but they can make a big difference in reducing the restraint on mobility. Portability is still rather limited to certain industries with multiemployee plans, but it, too, of course, is helpful in minimizing the constraints to moving.

In looking ahead, the chances are that migration and mobility will continue at least at current rates and may possibly even increase. Continuing changes in occupational and industrial structure, persistent technological advance, the movement of industry itself would seem to guarantee this development. The outlook is that labor-management agreements will increasingly take these factors into account, as many already do in providing various moving allowances, when jobs are terminated. And the federal government has recently entered the practice, especially under the Manpower Development and Training Act, by carrying out programs of mobility assistance for unemployed workers.

Migration and mobility are therefore part and parcel of the overriding theme of the job futures story: the need for adaptability and responsiveness to change.

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# CHAPTER IX

## *Income and Earnings*

In modern society work is the basis for the derivation of income, and this dimension of a job plays a key role in determining the level of living of most people. This is not to say that money is the only outcome of work, which can yield great satisfactions in other ways; neither does it say that income is the only determinant of workers' reactions to their jobs. People deliberately choose careers which are relatively lower-paying because they want to do certain kinds of work, as in teaching or religion; some will deliberately turn down increases in pay if they entail more time away from the family and home, or less time to write and to do research, or moving to a different town, and so on. Work can also bring discontents which override any considerations of money. However, every job and every career brings with it a variety of concerns about income for the individual and the family, and this chapter considers a number of major developments that have taken place in this arena during the recent past.

In general, the income level of American workers is the highest in the world and has been increasing significantly for many years. For example, the average family money income in the United States has increased from $3,031 in 1947 to $6,882 in 1965—more than doubling in a little over a decade and a half. Prices also went up during this period of time, so that not all of this increase was in real purchasing power. When adjustments are made for price change, the increase in family income since 1947 is still substantial —about 50 percent.

The United States Department of Labor periodically illustrates the position of the American workingman by comparing the purchasing power of his income with that of his counterpart in the Soviet Union.

In the beginning of 1966, for example, the Department of Labor reported that the average factory worker in Moscow made about 67 cents an hour, compared with a New York worker who averaged $2.70 an hour.

Differentials in earnings and prices net out as follows:

*Worktime Required to Buy Selected Goods, January 1966*

| *Commodity* | *Moscow* | *New York* |
|---|---|---|
| 1 pound of white bread | 23 minutes | 6 minutes |
| 1 pound rib roast beef | 73 minutes | 20 minutes |
| 1 quart of milk | 28 minutes | 5.9 minutes |
| 1 dozen eggs | 108 minutes | 14 minutes |
| 1 man's wool suit | 183 hours | 23.6 hours |
| 1 pair man's shoes | 41 hours | 6.6 hours |
| 1 fifth of vodka | 8 hours | 2 hours |

*Source:* U.S. Department of Labor, Bureau of Labor Statistics, *Monthly Labor Review*, July 1966.

Substantial progress also has taken place in moving more and more American families up the income scale. In 1947 almost one-third of all families had money incomes of less than $3,000; by 1965, the proportion of families with an income that low (adjusted for price change) had fallen sharply to below one-fifth. At the same time, the proportion of families with real incomes of $10,000 or more tripled. In 1947, the number of families living in poverty (money incomes of less than $3,000) was about equal to the number of families with real incomes of $7,000 or more; today, families with $7,000 or more of real income a year are more than double those still averaging less than $3,000.

Another interesting way of looking at the changing distribution of income in the United States is to point out that in 1947 a family with less than $1,580 a year was in the lowest fifth of all families in terms of real money income; by 1960 the lowest fifth included families with under $2,798 a year. In other words, families at the bottom of the money income totem pole in recent years are experiencing real incomes almost double those who were in that position in the immediate post-World War II period.

Similarly, incomes of $8,968 or more put families in the top 5 percent bracket in 1947; by 1960, the top 5 percent of families were averaging $14,385 a year or more in real money income.

This kind of trend has prevailed among practically every worker group in the country. For example, the average factory worker in this country was making about $49 a week in 1947; by 1966 the figure was over $110 a week—more than double the 1947 level. Even when these figures are also adjusted for price change, the increase is still a formidable 50 percent rise in average factory pay.

These overall figures, however, do mask very substantial and significant differentials in income and earnings in the United States. For example, concentrations of income still prevail, as can be seen from the fact that families with the lowest 20 percent of money income account for only 5 percent of all income, while those with the highest 20 percent of the money income take more than two-fifths of all annual income.

Income varies significantly by such personal characteristics as age, sex, color, marital status, and family size; it differs substantially by level of education, occupation, and industry; it can depend on geographic location and the prevailing standards in different job markets as well as the extent of unionization. Earnings can vary with the difficulty of a job, the responsibilities involved, sheer talent (a concert pianist, for example), custom and attitudes toward certain work (ministers, for example), public demand, and box office appeal (Elizabeth Taylor, for example).

Cutting across all these differential-inducing forces are still other considerations. Wage rates may be high but annual earnings comparatively low in a highly seasonal industry such as construction. Earnings may be very high, but for only a relatively short period of a person's working life, as with professional athletes. Potential income can be very high, but only for very few in a field, as in stage and TV work. Earnings may differ substantially for workers in the very same occupation depending on how and for whom they work; for example, a doctor's income can differ strikingly, depending on whether he has his own practice, works for a private firm, or is on a government payroll—for example, in the Public Health Service.

## *Some Income Differentials*

There are six important factors affecting income and earning differentials which require some additional comment. The first is one that ties in closely with a factor already mentioned a number of times, that of *education*. Calculations have been made of the

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with real incomes of $10,000 or more tripled. In 1947, the number of families living in poverty (money incomes of less than $3,000) was about equal to the number of families with real incomes of $7,000 or more; today, families with $7,000 or more of real income a year are more than double those still averaging less than $3,000.

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These overall figures, however, do mask very substantial and significant differentials in income and earnings in the United States. For example, concentrations of income still prevail, as can be seen from the fact that families with the lowest 20 percent of money income account for only 5 percent of all income, while those with the highest 20 percent of the lifetime earnings of workers and how they vary with educational attainment, and they show the following pattern:

| *Level of Education* | *Expected Lifetime Income* |
|---|---|
| Four years or more of college | $366,900 |
| One to three years of college | 269,105 |
| High-school graduation | 215,487 |
| One to three years of high school | 175,779 |
| Elementary-school graduation | 149,687 |
| Less than eight years of school | 106,449 |

Note the more than 40 percent difference between the lifetime earnings of a high-school and elementary-school graduate and the 70 percent differential between those of a college graduate and a high-school graduate.

The manner in which family income varies with the educational attainment of the head is shown in the following tabulation:

| *Education of Head of Family* | *Family Money Income in 1964* |
|---|---|
| Four or more years of college | $10,599 |
| One to three years of college | 8,102 |
| High-school graduation | 7,197 |
| One to three years of high school | 6,231 |
| Elementary-school education | 5,255 |
| Less than eight years of school | 3,667 |

Family income for those with the higher educational attainment is triple that for families with the lowest amount of schooling, and the step-up in income is clear and significant with each increase in level of education.

Related in major part to the factor of education are existing *occupational* differentials in income. Annual information on this subject is available currently for broad groups of occupations, the most recent of which is shown in Table 18. A cross reference to Table 13, which shows the educational attainment of the various occupational groups, will point up this relationship.

TABLE 18 *Money Income of Nonfarm Families Classified by Occupation of Head of Family 1965*

| | |
|---|---|
| *Professional and technical* | *$10,064* |
| Self-employed | 12,021 |
| Salaried | 9,908 |
| *Managers and officials* | *$ 9,721* |
| Salaried | 10,547 |
| Self-employed | 7,843 |
| Sales | 8,567 |
| Craftsmen | 7,982 |
| Clerical | 7,424 |
| Operatives | 6,872 |
| Service (except private household) | 5,920 |
| Laborers | 5,327 |
| Private household workers | 2,292 |

*Source:* U.S. Bureau of the Census, Current Population Reports, *Consumer Income,* Series P-60, No. 49, 10 August 1966.

As might be expected, the professional and technical personnel lead the earnings parade, with the self-employed substantially ahead of the salaried professional workers; the managerial and official groups are second, but here the salaried person has a higher annual money income than the self-employed (who can, and often does, end up with a loss). Among blue collar worker families, the skilled (*craftsmen*) averaged a little over $1,000 a year more than those headed by semiskilled workers (*operatives*), who in turn had incomes of about $1,500 a year higher than those of the unskilled (*laborers*). The range is quite substantial. Omitting the private household workers (domestics, most of whom are women and part-time, part-year workers), families with professional workers as their heads average almost double the yearly money income of those whose heads are unskilled laborers.

*Industry* differentials are also significant, even for the same general type of worker. Table 19 shows

TABLE 19 *Average Hourly and Weekly Earnings among Manufacturing Production Workers by Major Industry Group 1966*

| *Industry* | *Hourly Earnings* | *Weekly Earnings* |
|---|---|---|
| *All Manufacturing* | *$2.71* | *$112.19* |
| Petroleum products | 3.41 | 144.58 |
| Transportation equipment | 3.33 | 142.19 |
| Primary metals | 3.28 | 138.09 |
| Ordnance | 3.20 | 135.68 |
| Printing and publishing | 3.16 | 122.61 |
| Machinery | 3.08 | 134.90 |
| Chemicals | 2.98 | 125.46 |
| Fabricated metals | 2.87 | 121.69 |
| Paper | 2.75 | 119.35 |
| Stone, clay, glass | 2.72 | 114.24 |
| Instruments | 2.70 | 113.40 |
| Rubber | 2.66 | 111.72 |
| Electrical equipment | 2.64 | 108.77 |
| Food | 2.52 | 103.82 |
| Lumber and wood | 2.27 | 92.62 |
| Miscellaneous | 2.22 | 88.80 |
| Furniture and fixtures | 2.20 | 91.30 |
| Tobacco | 2.20 | 85.14 |
| Leather | 1.94 | 74.88 |
| Textiles | 1.96 | 82.12 |
| Apparel | 1.89 | 68.80 |

*Source: Manpower Report of the President* (Washington, D.C.: Government Printing Office, April 1967).

average hourly and weekly earnings among production workers in various manufacturing industries. In 5 of the 21 different industry groups, hourly earnings in 1966 averaged more than $3.00 an hour. In 3, hourly earnings were below the $2.00 mark. Hourly earnings in the leading industry group were about 75 percent above those in the last-ranked industry group. Weekly earnings, which are a combination of hourly earnings and hours worked, also showed a very substantial industry range, from more than $130 a week in such high-paying, overtime-working industries as *petroleum, primary metals* (mostly steel), and *transportation equipment* (mostly autos) to under $75 a week in some lower-paying industry groups (*textiles, apparel,* and *leather*).

Some industries have a higher (or lower) rank in hourly earnings than they do in weekly earnings, because of variations in their workweeks. For 1966, the year to which Table 19 applies, the workweek varied from 36.4 hours in *apparel* to 43.1 in *machinery.*

One of the most important differentials in income in all occupations and industries is the one related to *age,* which, in turn, is related to a person's stage of career development. Typically, income is relatively low in the early working years, rises with additional work experience, and reaches a peak when the individual is between 45 and 54 years of age; then it declines as the subjects terminate their working lives and move into retirement. In 1965, more than 36 percent of all families whose head was between 45 and 54 years of age had money incomes of $10,000 or over, in contrast to 7 percent of the families with heads aged 14 to 24 and 10 percent of the families with heads aged 65 years and older.

Many of the income data presented in this chapter relate to families because they are not only the typical spending or consuming units in the country but also the typical income-receiving units. In this connection, a recent phenomenon is the increasing number of families with *more than one earner,* which perhaps is not surprising in view of the fact that more than one out of every three workers are women.

By 1965, average family money incomes where there were two earners ($7,983) were 30 percent higher than the corresponding income of families where there was one wage earner. Families with three or more workers averaged an annual income figure ($10,269) more than a fourth higher than those with two earners.

Cutting across all the factors is the matter of *color:* nonwhites consistently have lower incomes and earnings than whites in the same regions, occupations, and industries, with the same educational attainments, age for age. Families whose heads are nonwhite have persistently averaged annual money income about half that of white families. The fact is that the income position of the nonwhite family has not significantly improved vis-à-vis that of the white during the post-World War II period. Some idea of the disparity is documented by the fact that the proportion of nonwhite families with incomes under $3,000 a year is 2½ times that of whites.

For the individual, the most relevant income and earnings relate to his or her specific job. Unfortunately, there do not exist any systematically collected comparable current data on earnings in specific occupations.

The data which are available strongly confirm the critical importance of the skill-education combination in determining a person's earnings. For example, 1965 information for women office workers in metropolitan areas shows a range of $68 a week for

Class B typists to $77.50 for switchboard operators to $81.50 for general stenographers to $102.50 for full-fledged secretaries. For men workers in the plant, hourly earnings ranged from $1.97 for janitors to $2.08 for guards and brakemen to $3.48 for tool and diemakers.*

There are significant variations, however, in the pay of persons with equivalent amounts of education, if only because of corresponding variations in the supply/demand situation among different fields. For example, the United States Women's Bureau published information in 1966 on what college women were earning seven years after graduation, depending on what their undergraduate major was. Among 17 different majors, the highest three places were taken by women whose fields were mathematics, chemistry, and psychology; the lowest three were art, music, and business and commerce.

Once every ten years, the census does collect earnings information across the occupational board. The latest data for 1960 are, of course, out of date, but they are still informative on the *relative* position of the various occupations on the earnings scale. At that time, annual incomes for 321 different occupations averaged all the way from $14,541 for the first-ranking physicians to $550 for the last-ranking newsboys.

Among the first 50 ranking occupations, 36 were in the professional and technical group, mostly in the health fields (doctors, dentists, optometrists), science (physicists, mathematicians, natural scientists), engineers, and, significantly, many college professors and instructors. Just to show that no one field has a monopoly on the highest-ranking jobs in point of earnings, the first 50 also include lawyers, economists, psychologists, and public relations men.

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* Cf. *Monthly Labor Review*, January 1966, Department of Labor, Bureau of Labor Statistics.

Thirteen of the remaining 14 occupations among the first 50 were in the managerial group, made up entirely of self-employed and salaried officials in American business enterprise. The lone occupation in the first 50 outside the professional and managerial classes was that of locomotive engineers—the high-seniority, high-earnings men working on the railroads.

Incidentally, locomotive engineer was the only work making the first 50 where educational attainment was below the high-school graduation mark. In fact, 19 of the first 50 in point of earnings had more than 17 years of schooling completed—that is *more than the equivalent of a master's degree*. And this was back before the recent big surge into the colleges.

The census listings were also instructive on the other side of the earnings spectrum, where the unskilled laborers and service jobs predominate. In only 6 of the lowest-ranking 50 occupations in point of earnings did workers average a high-school diploma —and these were mainly in fields which include the still low-paying professional ones like library assistants and religious workers. The highest-income unskilled occupation (longshoremen) ranked 197th in a total of 321.

It was not until the 138th ranked occupation that the service workers made the listings; and they got there that fast because of the protective service occupations of firemen, policemen, and sheriffs; after them, it was only when the 231st occupation was reached (hairdresser and cosmetologist) that the service workers made the listings again.

A few final comments are in order. The first is that there is a very substantial variation in earnings within each broad occupational group as well as among groups. Even in the professional and technical fields, the census listing showed a range all the way from the number one ranking physician to the 285th ranking religious worker. Many professional fields are low-paying areas of work; for example, minister, forester, librarian, dietitian, elementary-school teacher. Every other broad occupational group, including the unskilled laborer category, has job fields which pay more than some professional pursuits. Also to be noted is the relatively low ranking for persons in the entertainment field (actors—153rd; musicians—202nd; dancers—277th) or in the sports field (athletes—164th): the Mickey Mantles and Elizabeth Taylors are few and far between.

Among the blue collar workers, the skilled–semiskilled–unskilled order holds, even though again there are occupations in the unskilled category which outrank some in the semiskilled in terms of annual earnings, and some in the unskilled which do the same to the skilled. Among the craftsmen, highest earnings are found in the foremen's ranks and the key, highly skilled occupations such as the pattern, model, and tool workers. Many of the skilled occupations in the construction trades do not rank as high because of lower annual earnings due to seasonal slacks during bad weather.

Variations in earnings and income are reflectors of important differences in levels of living in the United States. In fact, some of those variations are themselves caused by the inroads of spells of unemployment to which some job fields are much more prone than others, and some of the end results are seen in the nature and conditions of poverty to which we now turn.

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CHAPTER X

# Unemployment and Poverty

The subject of earnings, which has just been reviewed, disclosed the important finding that merely having *a* job is not the only factor to be reckoned with in looking at a person's role in the future world of work. The fact that fully one-half of all families living in poverty are headed by employed persons emphasizes the point.

In fact, the poverty profile in the United States is an instructive phenomenon for all persons interested in the job-future story. One of the most telling of its features relates to the association between poverty and educational attainment which prevailed at mid-decade:

| *Education of Head of Family* | *Incidence of Poverty* |
|---|---|
| *Total* | *19%* |
| Less than 8 years of school | 44 |
| 8 years | 25 |
| 9–11 years | 18 |
| 12 years | 10 |
| 13–15 years | 9 |
| 16 or more years | 5 |

The proportion of families headed by a person with less than a grade-school education who live in poverty is almost nine times as high as for those whose head had a college education. The incidence of poverty among the college graduates (16 or more years—confined predominantly to young college graduates at the beginning of their career development or the elderly living in retirement) is half of that among high-school graduates (12 years), which in turn is almost half of what it is among those with some high school but no diploma (9–11 years).

Very much the same pattern can be seen in the distribution of unemployment in this country as shown in Table 20. In March 1965, the overall unemployment rate for men 18 years of age and over was 4.4 percent. The only groups whose unemployment rate was below that figure were high-school graduates (12 years) and those who had some college work (13–15 years and 16 years and over). The range in unemployment among the various educational attainment groups was very large, and the correlation between level of schooling and joblessness was gen-

TABLE 20 *Unemployment Rates for Men 18 Years of Age and Over by Years of Schooling Completed, March 1965*

| *Years of Schooling* | *Unemployment Rate* |
|---|---|
| Less than 5 years | 7.1 |
| 5–7 | 6.5 |
| 8 | 5.2 |
| 9–11 | 6.7 |
| 12 | 3.4 |
| 13–15 | 3.1 |
| 16 and over | 1.4 |
| *Total* | 4.4 |

*Source:* U.S. Bureau of Labor Statistics, *Employment and Earnings*, April 1965.

erally inverse: the higher the years of schooling, the lower the unemployment rate.

Variations in both unemployment and poverty are substantial, depending on the social and economic characteristics of the groups involved, as seen in Tables 21 and 22 (presented at the end of this chapter). Most of them are related, in turn, to the various trends reviewed in this volume.

Thus, one of the major facts about unemployment in the United States is its differentially high concentration among young people. Teenage youth have had the highest rates of joblessness of any group in the entire postwar period; they represent the only sector of the working population whose situation did not improve substantially during the record-breaking expansion which began in the first part of 1961. In recent years, their unemployment rate has been running at about triple the national, overall figure. Persons in the upper range among youth—those 20 to 24 years of age—also experience relatively high rates of unemployment, averaging about 1½ times the rate for all workers. All in all, 16–24-year-olds account for approximately one-sixth of all new workers, but one-third of all the unemployed.

Youth also composes a significant part of this country's poverty problem. In recent years, there have been about 1 million persons 14 to 24 years of age living by themselves or as lodgers in someone's house (known as "unrelated individuals" in census terminology). Taking a poverty line of $1,500 for them, almost *50 percent* of all these young people are living in poverty. People of this age group also are family heads, of course. There were 2¼ million families whose head was 14 to 24 years of age, and *30 percent* of them were living in poverty, that is, had annual money incomes of $3,000 or less.

Some higher levels of unemployment for younger people are to be expected since they are inexperienced and at the beginning of their career development; they also tend to move about much more frequently than other age groups, experimenting a good deal with various kinds of work. But a significant part of the problem lies in the major recurring theme of this volume and the one with which we began this chapter—the factor of education. The intractable problem of youth unemployment is in substantial part the problem of the young school dropout. His unemployment rate runs about 50 percent higher than the high-school graduate's; a much higher proportion of the boys who drop out of school (23 percent) than of those who graduate (9 percent) are not even in the labor force at all; dropouts are 3½ times as likely as high-school graduates to be members of families living in poverty.

Not surprisingly, unemployment and poverty are also concentrated among certain occupational groups. In not a single year of the entire postwar period has unemployment exceeded the 2 percent mark for professional personnel; in fact, it has never gone above the 4 percent mark during that period of time for any of the white collar occupations. Just as consistently, the unemployment rates in the country have been differentially high for the less skilled sectors of the labor force. Not surprisingly again, the lesser skilled (and, incidentally, the lower educational attainment groups) also show up with the highest incidence of poverty.

The forces of unemployment and poverty bear heavily on the Negro in particular. Among Negroes unemployment reaches almost unbelievably high proportions; in recent years, for example, the unemployment rate has been hovering around the 20 percent to 25 percent mark for teenage Negro boys and around the 25 percent to 30 percent mark for teenage Negro girls. As a general rule, Negroes make up about 10 percent of the labor force, 20 percent of the unemployed, 25 percent of the long-term unemployed. Negro families make up about 10 percent of all United States families, but 22 percent of families living in poverty.

These disadvantages have their roots in three major forces: their education, their occupational distribution, and the discriminatory practices to which they are subjected.

Negroes have made enormous strides in educational attainment in recent years. For example, more than twice as high a proportion of Negroes were high-school graduates in 1966 than after the end of World War II. The tremendous difference between the old and new generations is shown by the fact that in 1966, the proportion of Negroes 25 to 29 years old with a high-school education or more was actually six times as big as for those 65 years of age and over.

A historic mark, in fact, was reached in 1965 when, for the first time, nonwhites 25–29 years of age (when most people have completed their education) averaged a high-school education. In 1947, this group averaged a grade-school education.

However, the road is still a long one, and the Negro worker is still concentrated in the low-paying, low-skill jobs. Thus, the proportion of Negro males in unskilled jobs is triple the corresponding ratio among whites, and the proportion of white males in professional jobs is 2¼ times the ratio for Negroes. Again, about one-third of all Negro women workers are domestics; only 10 percent are in such fields as clerical jobs, where 33 percent of the white women workers are employed.

Education and training represent one of the truly important pathways down which the Negro must go to achieve a higher rank in the job market, as is true of the large numbers of whites living in poverty. Without meeting the competition in the realm of education, they will find it difficult even to get a turn at bat. But discrimination makes this even a more difficult problem for the Negro than it would otherwise be. The lack of truly integrated, equal educational and employment opportunity exacerbates the problem inordinately. To what degree this is true is seen in the fact that the average white student, by finishing high school, can cut in half the probability of his being unemployed; for the Negro, up to very recent times, high-school graduation reduced the chances of joblessness very little. This is why it is no exaggeration to say that integrated and affirmatively equal educational and employment opportunity is an absolutely necessary condition for changing this dimension of the world of work for Negroes.

The problems of unemployment and poverty also have a very definite geographic cast. This factor is perhaps best illustrated by the rural farm areas in this country. As we have already noted, agricultural jobs have been declining significantly. The result has also been a loss in population from rural areas at the rate of about a million people a year. Most of these movers have been young people in their productive years, migrating in search of economic opportunity. This has made it all the more difficult for those areas where there are almost as many dependent people under 18 and 65 years and over as there are in the productive ages 18 to 64.

At the same time, unemployment in agriculture is about twice the rate it is for the nonfarm sector of the economy. The problem is particularly acute for the hired farm worker who recently had been averaging less than 150 paid working days a year; about one in ten reported his chief activity during the year to be unemployment. All of this has added up to an incidence of poverty among farm-area families of more than 40 percent (about 2½ times the rate for nonfarm families). For Negro farm families the poverty rate is an almost unbelievable 80 percent.

The geography of unemployment and poverty is not an agricultural or farm-area problem only. There is a group of large, urban manpower centers which have experienced substantial and persistent unemployment problems, too. Some represent areas of the country which were one-industry towns (such as certain New England cotton textile centers), where a major technological change has taken place (like the shift from steam to diesel locomotives which affected some Pennsylvania areas), where a natural resource has become depleted (iron ore in Minnesota), or the market for a product has declined (coal in West Virginia). Some regions such as Appalachia suffer from a combination of these forces.

Long-term adjustments and high levels of economic growth have aided in the solution of many of these geographic problems. In fact, after six years of sustained high levels of economic activity, the number of major labor areas classified by the Department of Labor as "areas of substantial unemployment" had dwindled to eight at the end of 1966*—the lowest since such classifications were begun in 1951.

Huge, persistent, and dangerous pockets of poverty also are clearly present, of course, in the inner cities of this country's metropolitan areas such as

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* Altoona, Penna.; Fall River, Mass.; Fresno, Calif.; Lowell, Mass.; Mayaguez, P.R.; Ponce, P.R.; San Bernardino–Riverside–Ontario, Calif.; Stockton, Calif.

Watts (Los Angeles), Hunters Point (San Francisco), Hough (Cleveland), Harlem (New York), Southside (Chicago). Among all standard metropolitan areas in the United States, where almost 70 percent of the total population live, the situation is this:

Almost 49 percent of the population of metropolitan areas live in the inner, central city (but 62 percent of the poor live in the central city).

Almost 51 percent of the population of metropolitan areas live outside the inner, central city (but only 38 percent of the poor live outside the central city).

Such geographic pockets of unemployment represent some of the most difficult problems of joblessness and poverty in this country. They tend to be long-lasting, and they highlight what happens when there is a concentrated combination of low education, discrimination, and the constellation of aggravated social, health, housing, and other economic conditions which surrounds such a combination.

## READINGS AND REFERENCES

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2. House of Representatives, Committee on Education and Labor, *Poverty in the United States* (Washington, D.C.: Government Printing Office, 1964).

**TABLE 21** *A Profile of Unemployment in the United States*

Unemployment Rates in 1966 by Selected Social and Economic Characteristics

| *Characteristics* | *Unemployment Rate* | *Characteristics* | *Unemployment Rate* |
|---|---|---|---|
| *Total* | *3.9%* | *Occupation* | |
| *Age (males)* | | Professional, technical | 1.3 |
| 16–19 | 4.7 | | |
| 20–24 | 4.6 | Managerial | 1.0 |
| 25–44 | 2.2 | Clerical | 2.8 |
| 45–64 | 2.2 | Sales | 2.7 |
| 65 and over | 3.1 | Craftsmen | 2.8 |
| | | Operatives | 4.3 |
| | | Laborers | 7.3 |
| *Color* | | Service (except private household) | 4.8 |
| White | 3.3 | | |
| Nonwhite | 7.3 | Private household worker | 3.6 |
| *Color/Sex/Age* | | Farm manager | 0.4 |
| White males, 16–19 years | 11.2 | Farm laborer | 4.1 |
| | | *Industry* | |
| Nonwhite males, 16–19 years | 25.4 | Manufacturing | 3.2 |
| | | Mining | 3.8 |
| White males 20 years and over | 2.2 | Construction | 7.1 |
| | | Transportation and public utilities | 2.0 |
| Nonwhite males 20 years and over | 4.9 | Trade | 4.4 |
| *Marital Status (males)* | | Finance, insurance, and real estate | 2.1 |
| Married | 1.9 | Service | 3.2 |
| Single | 8.6 | Public administration | 1.6 |
| Other (divorced, separated) | 5.6 | Agriculture | 6.5 |

*Source: Manpower Report of the President, 1967.*

### TABLE 22 *A Profile of Poverty in the United States*

Incidence of Poverty in 1962 by Selected Social and Economic Characteristics of Family Heads (Proportion of Families in Each Classification with Annual Incomes under $3,000)

| *Characteristics* | *Incidence of Poverty* | *Characteristics* | *Incidence of Poverty* |
|---|---|---|---|
| *Total* | *20%* | *Occupation* | |
| *Employment status* | | Professional, technical | 3 |
| Employed | 12 | Clerical | 7 |
| Unemployed | 34 | Sales | 9 |
| Not in the labor force | 50 | Craftsmen | 5 |
| *Residence* | | Operatives | 11 |
| Farm | 43 | Nonfarm laborers | 23 |
| Nonfarm | 18 | Service (except private household) | 22 |
| *Color* | | Private household | 74 |
| White | 17 | Farm laborers or foremen | 56 |
| Nonwhite | 44 | | |
| *Age* | | *Number of children* | |
| 14–24 years | 31 | None | 26 |
| 25–44 | 13 | 1 | 17 |
| 45–54 | 19 | 2 | 13 |
| 65 and over | 47 | 3 or more | 17 |
| *Sex* | | | |
| Male | 17 | | |
| Female | 48 | | |

*Source: Economic Report of the President* (Washington, D.C.: Government Printing Office, January 1964), Chap. 2.

# *Conclusion*

The forces described in this volume, especially as they involve people and their relationship to their economic and social environment, are operating with great strength and there appears to be nothing in the offing which is going to diminish their impact.

Under these circumstances, there are five factors which become surpassingly important to everyone involved in the career process—the family, the educators and trainers, the students and trainees, the government and various community agencies.

## *1. A Strategy of Career Development*

The one transcendent theme of this volume has been the inexorable force of change, its vicissitudes, the significant challenges it generates, the great opportunities it creates.

The tactics of responding to change will vary with place, time, and the individual. But the strategy involved seems given: every individual has to get the broadest vantage point in his education, training, and, in fact, work experience, so that he can be as flexible, adaptable, maneuverable, and responsive to these changes as possible.

The persistent and persevering technological development, the crosscurrents affecting the very nature of work, the job changing, and job mobility all attest the critical importance of this strategy.

## 2. *Learning, Labor, and Leisure*

The life span of the individual has almost always been viewed as the sum of a number of discrete, although interrelated sectors involving growing up and getting an education, working and making a living, and retiring and reaping the rewards of the first two stages.

More importantly from the point of view of career development, these three stages of man (and, as indicated in Chapter V, more and more so for women as well) have been considered chronologically sequential, one following the other; the first the prerequisite for the second, the second the prerequisite for the third.

More recently, and especially in the context of the new strategy of career development, the advisability —even the reality—of such a series of events has been challenged and the future almost certainly portends a co-mingling of learning, labor, and leisure over the lifetime of the individual.

There are at least three implications of such an eventuality for the relationship of people to their world of work. The first emphasizes the importance of continuing education over a lifetime, a constant refurbishing and reendowment of learning and skill. It calls into question the ideas of a "terminal education" or a "terminal degree" so often used in education.

The second similarly calls into question our concepts of work. Community or volunteer service with the poor are not counted in the GNP and they earn no credits for social security benefits. Why not? What would happen to dropouts, what would happen to motivation to retrain and keep up to date if education and training got points toward retirement on a par with work?

The third relates to retirement itself and questions the concept of a complete and final exit from "gainful" work as its condition. More and more persons already are, and more and more will combine in varying degrees all three components of learning, labor, and leisure in the later years.

### 3. Importance of a Skill and a Craft

In the specific world of work, it is important to underline the urgent need for the manually talented person.

It is one of the ironies of the current technological revolution with its technical complexities that most of the attention has been confined to the white collar jobs in the story and in the action in career development.

Some of this is understandable, since the white collar jobs have been the fast growing, high paying, glamour, and generally shortage fields. But unfortunately, the skilled crafts have been almost lost in the crowd. Worse, they have been denigrated in the educational scheme of things, as illustrated by the incredibly low esteem that training in the vocational or the manual arts has in this country. To a major extent, vocational training at the secondary school level has become the dumping ground for "poor" students and the source of the preponderant majority of early school leavers.

All of this has occurred despite mounting evidence of a significant shortage of skilled and technical personnel who can diagnose, repair, and operate the engines, the tools, and the instruments of our technological age.

Already, the skilled craftsmen have replaced one of the white collar occupations (clerical field) in the first division in the earnings standings. They are now outranked only by the professional, managerial, and sales personnel—and their standing continues to move upward.

## 4. *The Quality of Education*

Much of what the future demands in the face of all that has been described so far depends very greatly on the leadership exhibited in education and training in general, in guidance and counseling in particular.

The educational process itself has to be first class.

The educational process itself, in accordance with our first point, has to be flexible, mobile, experimenting, innovative, involved, engaged, responsive with new forms to the changes which are taking place.

The educational process itself, in accordance with our second point, has to position itself in such a way that it can afford and provide learning experiences over the lifetime of an individual.

The educational process itself, in accordance with our third point, has to enhance the pathways for those who need learning in the vocational skills as well as the academic.

For educational process, read teachers, curricula, and even a responsive constellation of plant and equipment.

## 5. *Importance of Economic and Manpower Policy*

The prognosis for the forces which have been described, as well as for their implications now under review, depends in a critical fashion on the continuing public commitment to two relatively new aspects of public policy.

The first, and of obvious import to the world of work, is the commitment to use all instruments of economic policy to keep economic growth and employment growth at a sustained level to provide job opportunities for all who wish and seek them. From fiscal policy involving taxes to intricate monetary policy involving "Operation Twist" and interest rates, the resolve to keep alive the Employment Act of 1946 and maintain full employment is the key to the projections, trends, and outlook of all the basic forces reviewed in this volume.

The second, and of obvious related import to the world of education, is the commitment to use all instruments of manpower policy to sustain a level of education opportunities for all who wish and seek them. From Head Start to the Higher Education Facilities Act, from on-the-job training in the private sector to the millions of company-supported classroom hours of instruction with pay to its employees by industry and business, the resolve to maintain an up to date labor force is the key to the successful education and guidance response to the challenge of a changing world of work.

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